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Service Manual

• KE-4343

ORDER NO.
CRT 1143

CASSETTE CAR STEREO WITH FM/AM ELECTRONIC TUNER

KE-4343 UC
KE-3525 US
KE-3333 UC
KE-2323 UC

Note:
- **See the separate manual CX-166 (CRT1094) for the cassette mechanism description.**

CONTENTS

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1. SPECIFICATIONS

General

Power source ..... 14.4 V DC (10.8 — 15.6 V allowable)
Grounding system ..... Negative type
Max. current consumption
(KE-4343, KE-3525, KE-3333) ..... 2.5 A
(KE-2323) ..... 1.8 A
Dimensions (chassis) ..... 170(W) × 50(H) × 130(D) mm
[6-3/4(W) × 2(H) × 5-1/8(D) in.]
(nose) ..... 105(W) × 42(H) × 36(D) mm
[4-1/8(W) × 1-5/8(H) × 1-3/8(D) in.]
Shaft interval ..... 130 or 147 mm (5-1/8 or 5-3/4 in.)
Weight ..... 1.3 kg (2.9 lbs.)

Amplifier (KE-4343, KE-3525, KE-3333)

Continuous power output is 3.2 W per channel min. into 4 ohms, both channels driven 50 to 15,000 Hz with no more than 5% THD.
Maximum power output ..... 8.5 W × 2/7 W × 4 (EIAJ)
Load impedance ..... 4 Ω (4 — 8 Ω allowable)
Preout output level/Impedance ..... 500 mV/100 Ω
Tone controls (bass) ..... ±10 dB (100 Hz)
(treble) ..... ±10 dB (10 kHz)
Loudness contour ..... +8 dB (100 Hz) (volume: −30 dB)

Amplifier (KE-2323)

Continuous power output is 3.2 W per channel min. into 4 ohms, both channels driven 50 to 15,000 Hz with no more than 5% THD.
Maximum power output ..... 8.5 W × 2 (EIAJ)
Load impedance ..... 4 Ω (2 — 8 Ω allowable)
Preout output level/Impedance (RCA) ..... 500 mV/100 Ω
Loudness contour ..... +8 dB (100 Hz) (volume: −30 dB)

Tape player

Tape ..... Compact cassette tape (C-30 — C-90)
Tape speed ..... 4.76 cm/sec. (+0.14 cm/sec., −0.05 cm/sec.)
Fast forward/rewind time ..... Approx. 100 sec. for C-60
Wow & flutter ..... 0.13% (WRMS)
Frequency response ..... 50 — 14,000 Hz (±3 dB)
Stereo separation ..... 45 dB
Signal-to-noise ratio ..... 52 dB (IHF-Anetwork)

FM tuner

Frequency range ..... 87.9 — 107.9 MHz
Usable sensitivity ..... 12 dBf (1.1 μV/75 Ω, mono)
50 dB quieting sensitivity ..... 17 dBf (1.9 μV/75 Ω, mono)
Signal-to-noise ratio ..... 70 dB (IHF-A network)
Distortion ..... 0.3% (at 65 dBf, 1 kHz, stereo)
Frequency response ..... 50 — 15,000 Hz (±3 dB)
Stereo separation ..... 35 dB (at 65 dBf, 1 kHz)
Selectivity ..... 70 dB (2ACA) (±400 kHz)

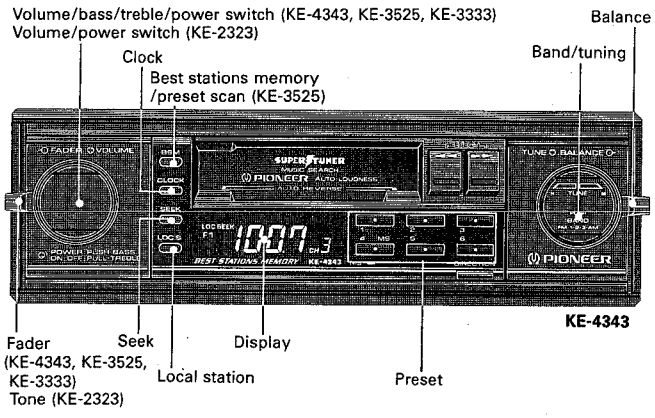
AM tuner

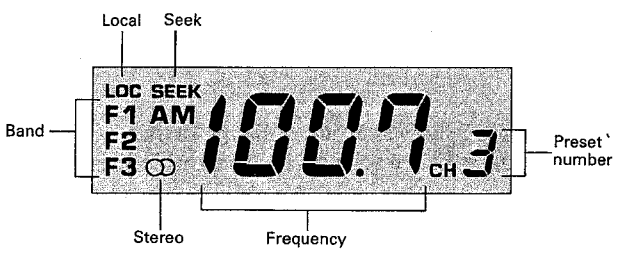
Frequency range ..... 530 — 1,620 kHz
Usable sensitivity ..... 18 μV (25 dB) (S/N: 20 dB)
Selectivity ..... 50 dB (±10 kHz)

These specifications were determined and are presented in accordance with specification standards established by the Ad Hoc Committee of Car Stereo Manufacturers.

Note:
Specifications and the design are subject to possible modification without notice due to improvements.

2. USING THE RADIO





- **Before attempting operation...**
- Set the fader control to the left horizontal. (KE-4343, KE-3525, KE-3333)
- Since the set is designed preferentially for tape play, eject a cassette tape, if mounted, before operating the radio.

1. Turning the power switch to the right causes power to switch ON and the current frequency to appear on the display.
2. Press the band switch to select the band.
3. Press the seek button and the seek tuning indicator will be displayed.
4. Turn the tuning knob to the left or right to tune in the desired frequency. (Turning to the right will increase the frequency.)
5. Adjust the volume and balance.

KE-4343, KE-3333

6. Adjust the tone to the desired position. To adjust bass, turn the volume knob while pressing it. For treble, turn the volume knob after it has been pulled out until it clicks into place. Return the volume knob after adjusting the tone.

KE-2323

6. Adjust the tone.

- **To enter a frequency into the preset memory...**

7. Hold down one of the preset buttons (1 — 6) for approximately two seconds. The frequency is stored in memory (assigned to the preset button pressed) once the preset number stops flashing on the display.
Six FM1 frequencies, six FM2 frequencies, six FM3 frequencies and six AM frequencies can be entered.

● Auto-Loudness
When playing back a tape or listening to the radio at low volume, the low tone is automatically emphasized.

● Clock Switch
Each press causes the display to switch between clock and frequency.

● Best Stations Memory Button
Automatically tunes strong frequencies and assigns them to preset buttons 1 through 6 for one-touch automatic tuning. The best stations memory function is activated by pressing this button for approximately 2 seconds. The best stations memory function is indicated by —— flashing on the display, and this function can be canceled by pressing the band switch. Once frequencies have been assigned to the preset buttons, each one is tuned in and played for eight seconds. Finally the frequency assigned to preset button 1 is tuned in to complete the procedure.

- 6 best (strongest) frequencies are memorized in the 6 preset buttons in the order of their strength, the strongest one being assigned to preset button 1.
- The frequencies previously assigned to the preset buttons are retained when 6 frequencies cannot be located.
- The best stations memory is in operation while —— is flashing on the display.

● Local Station Switch
Pressing this switch increases the seek threshold level so that only relatively strong stations can be tuned in (local indicator will illuminate on the display). Local seek threshold level can be selected among four levels for FM and two levels for AM.
Holding this switch down for approximately 2 seconds and then turning the tuning knob to the right changes the display from L-1, L-2, L-3 to L-4. Turning the tuning knob to the left changes the display from L-4, L-3, L-2 to L-1. (L-1 and L-2 for AM.) The bigger the number, the higher the seek threshold becomes and only relatively strong stations can be tuned in.

● Fader Control (KE-4343, KE-3525, KE-3333)
This control is used to adjust the balance between the front and rear speakers when using a 4-speaker system. Turning the control upwards decreases the volume of the rear speakers, while turning it downwards decreases the volume of the front speakers. With 2-speaker systems, set this control to a horizontal position.

Seek Tuning
Press the seek button, and tuning to the next higher or lower broadcast on the band can be accomplished automatically by simply turning the tuning knob to the left or right. FM frequencies change in 0.2 MHz steps while those in the AM band change in 10 kHz steps.

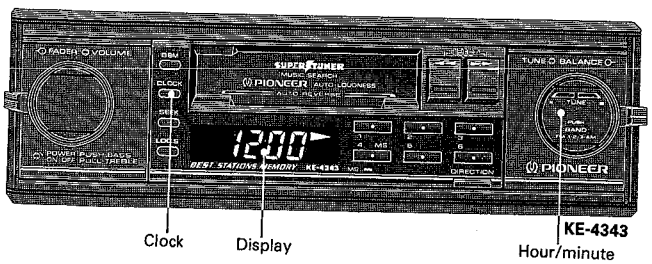
Preset Tuning
Pressing the preset button instantly tunes in the frequency programmed in the memory for that button.

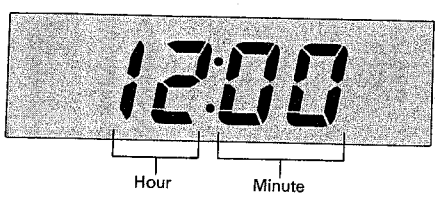
Manual Tuning
When manual tuning is employed, FM frequencies change in 0.2 MHz steps while AM frequencies change in 10 kHz steps.

1. Press the seek button and the seek tuning indicator will disappear from the display.
2. Change the frequency by turning the tuning knob to the left or right. Turning the knob once will change the frequency one step (see above). Holding the tuning knob in either direction will successively change the frequency at the prescribed step.

Preset Scan Tuning (KE-3525)
Pressing the preset scan button (CH indicator flashes) causes previously stored frequencies to be tuned in sequentially for eight seconds each. Press again when the desired frequency is tuned in to cancel preset scan tuning.

3. SETTING THE TIME

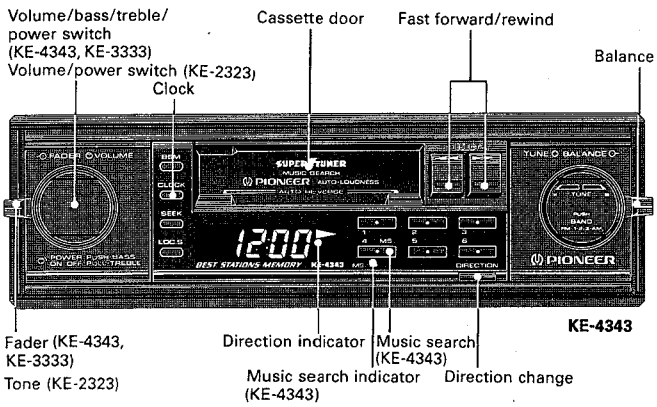




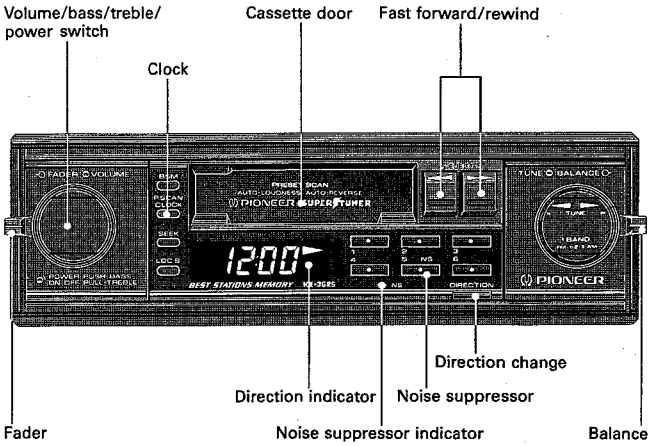
1. Press the clock switch to switch to the time display.
2. Each turn of the hour/minute control knob to the left while the clock button is depressed advances the hour setting one hour, while each turn to the right advances the minute setting one minute. Holding the control knob in either position results in high speed advance of the respective setting.

4. USING THE TAPE DECK

● **KE-4343, KE-3333, KE-2323**



● **KE-3525**



● **Before attempting operation...**

- Set the fader control to the left horizontal. (KE-4343, KE-3525, KE-3333)

1. Turning the power switch to the right causes power to switch ON.
2. Loading a cassette tape into the load slot causes playback to begin automatically.
3. Adjust the volume and balance.

KE-4343, KE-3525, KE-3333

4. Adjust the tone to the desired position. To adjust bass, turn the volume knob while pressing it. For treble, turn the volume knob after it has been pulled out until it clicks into place. Return the volume knob after adjusting the tone.

KE-2323

4. Adjust the tone.
5. When tape playback reaches the end of the tape, playback will automatically switch from the side being played to the opposite side (ie. Side A to Side B or vice versa) (Auto-reverse). To eject the tape during playback, simultaneously press the fast forward and rewind buttons.

- A loose or warped label on a cassette tape may interfere with the eject mechanism of the unit or cause the cassette to become jammed in the unit. Avoid using such tapes or remove such labels from the cassette before attempting use.
- Do not try to eject the cassette immediately after insertion, as it will cause malfunction. Wait a few seconds.

KE-3525, KE-3333, KE-2323

- Be sure to eject the tape when the vehicle's ignition is turned OFF. Leaving the tape in the unit can deform the pinch roller causing wow and flutter during tape playback.

● **Fast Forward/Rewind**

Since the transport can be in either direction, both the left and right high-speed tape transport buttons can be regarded as fast forward/rewind buttons.
For fast forward, press the high-speed tape transport button that corresponds to the direction that is shown by the direction indicator. When the end of the tape is reached, playback will automatically begin from the opposite side of the tape (Auto-reverse).
For rewind, press the button that is opposite that of the direction shown by the direction indicator. When the end of the tape is reached, playback will automatically begin from the beginning of the same side of the tape (Auto-replay).
Fast forward and rewind can be terminated by pressing the respective opposite high-speed tape transport button.

● **Direction Change Button**

This button is used to switch from one side of the tape to the other (from Side A to Side B or vice versa).

● **Noise Suppressor Switch (KE-3525)**

Press to reduce tape hiss.

Music Search (KE-4343)

● **Returning to the beginning of selection A**

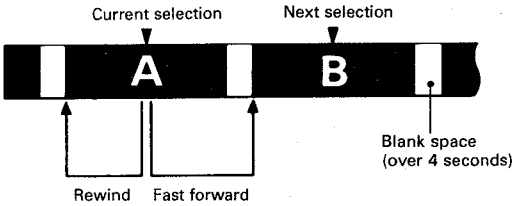
Press the music search button and then the high-speed tape transport button for the direction opposite that shown by the direction indicator. Playback will automatically start from the beginning of selection A.

● **Moving from selection A to selection B**

Press the music search button and then the high-speed tape transport button that corresponds to the direction shown by the direction indicator. Playback will automatically start from the beginning of selection B.

To enable regular fast forward/rewind operations, press the music search button again to turn the function OFF. The following errors will cause the music search function to operate improperly, even though the unit is not malfunctioning.

- Unrecorded "blank" portions between selections is less than 4 seconds → the blank portion cannot be detected by the unit.
- Pauses in recorded conversations are longer than 4 seconds → the unit reads these as blanks between selections.
- Portions are recorded at very low volume for more than 4 seconds → the unit reads these as blanks between selections.



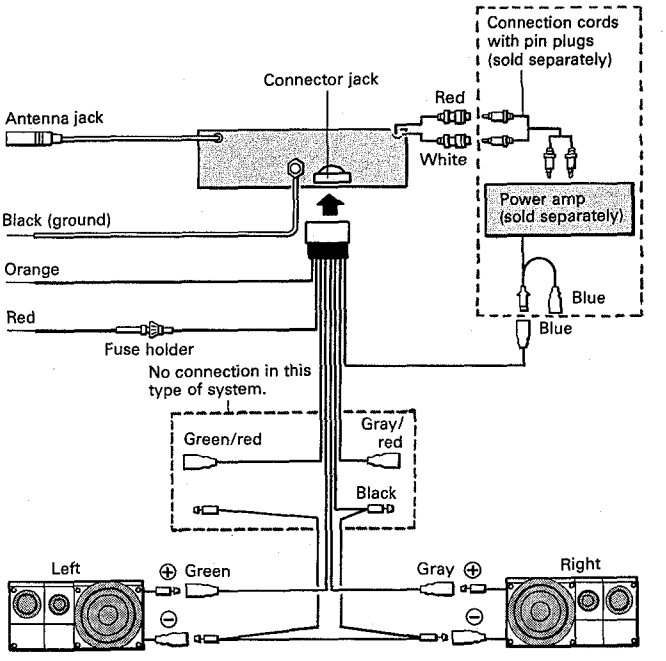
5. CONNECTIONS

Note:

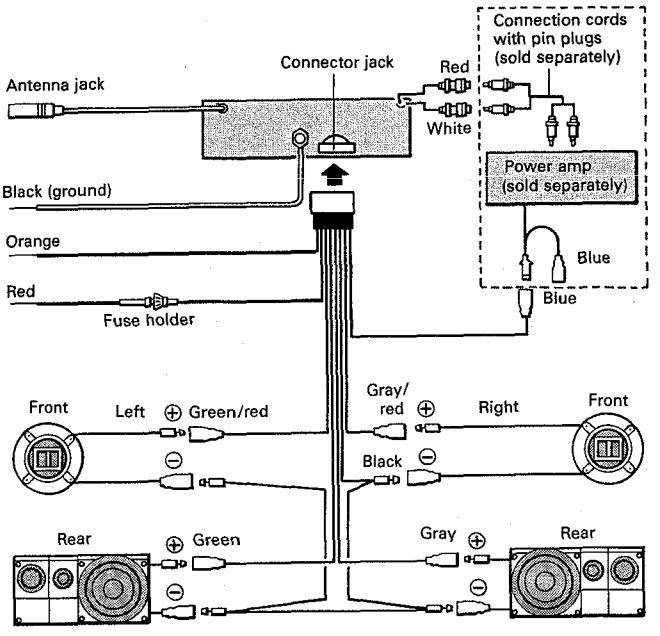
- To avoid shorts in the electrical system, be sure to disconnect the battery ⊖ cable before beginning installation.
- Replace fuses only with the types stipulated on the fuse holder.
- Be sure to properly connect the color coded leads. Failure to do so can cause malfunctions.
- Cover unused terminals with tape to prevent electrical shorts. (KE-4343, KE-3525, KE-3333)
- Refer to the power amp owner's manual when connecting a power amp (sold separately) to the pin jack. (KE-4343, KE-3525, KE-3333)

Black (ground)	To vehicle (metal) body.
Blue	System control/Auto-antenna relay control terminal (Max. 300 mA 12 V DC).
Orange	To terminal always supplied with power regardless of ignition switch position.
Red	To electric terminal controlled by ignition switch (12 V DC) ON/OFF.

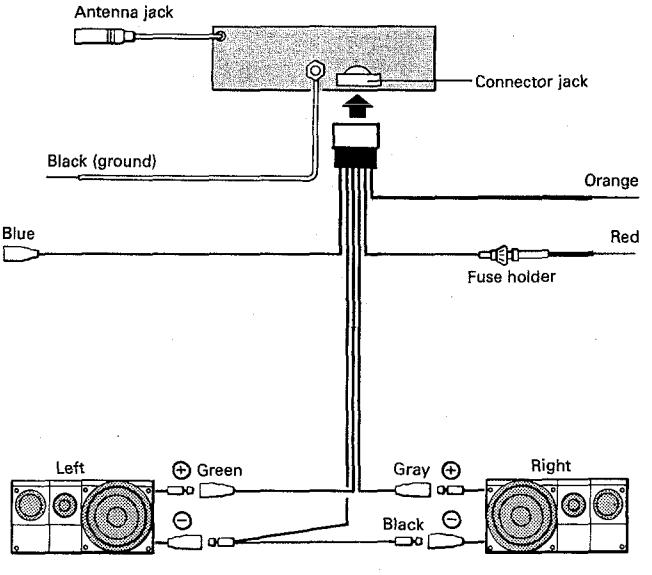
KE-4343, KE-3525, KE-3333 2-speaker system



KE-4343, KE-3525, KE-3333 4-speaker system



KE-2323



6. DISASSEMBLY

- **Removing the Case**

1. Remove the four screws, and then remove the case.

- **Removing the Grille Assy**

1. Press tabs at two locations indicated by arrows, and pull out the grille assy.

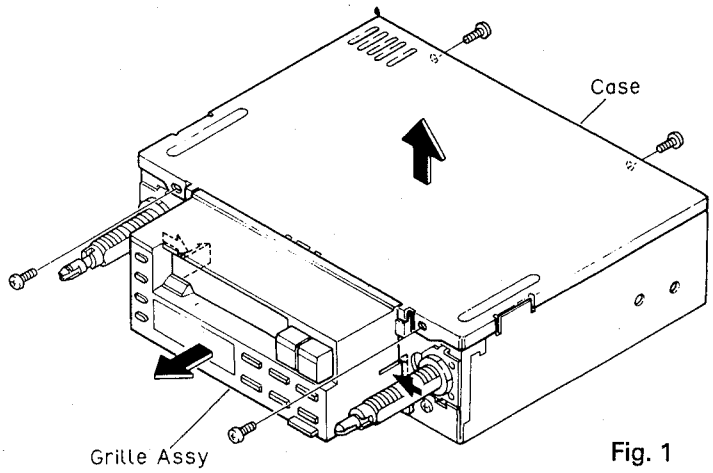


Fig. 1

- **Removing the Cassette Mechanism Assy**

1. Disconnect the two connectors.
2. Remove the four screws, and then remove the cassette mechanism assy.

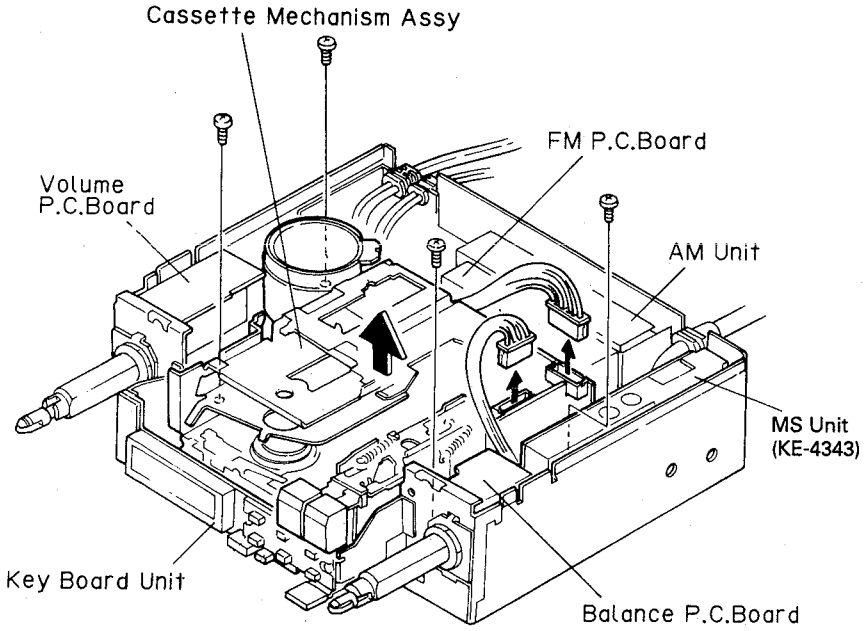


Fig. 2

• Removing the Chassis Unit

1. Remove the five screws.
2. Unbend tab until straight, and then remove the chassis unit.

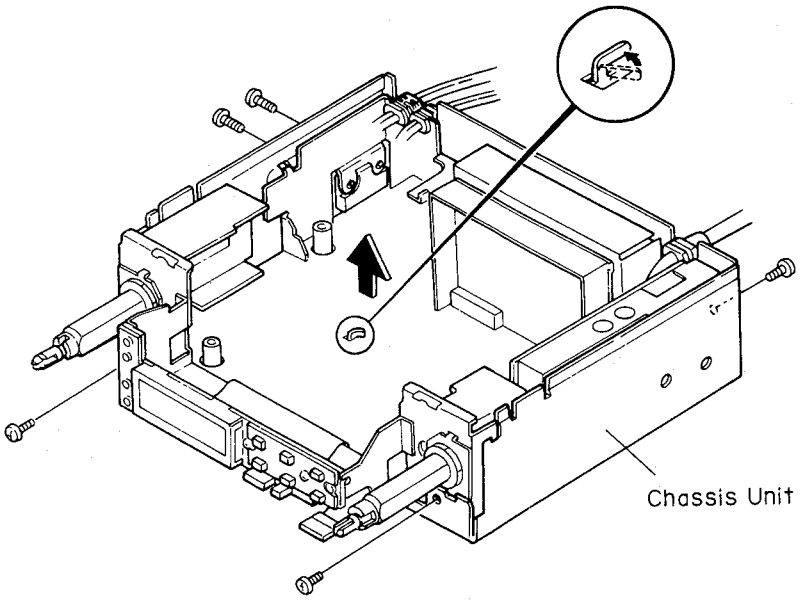


Fig. 3

• Removing the AM Unit, FM P.C.Board and MS Unit

1. Unbend tabs on back of each unit circuit board until straght, and pull out units as shown in illustration.

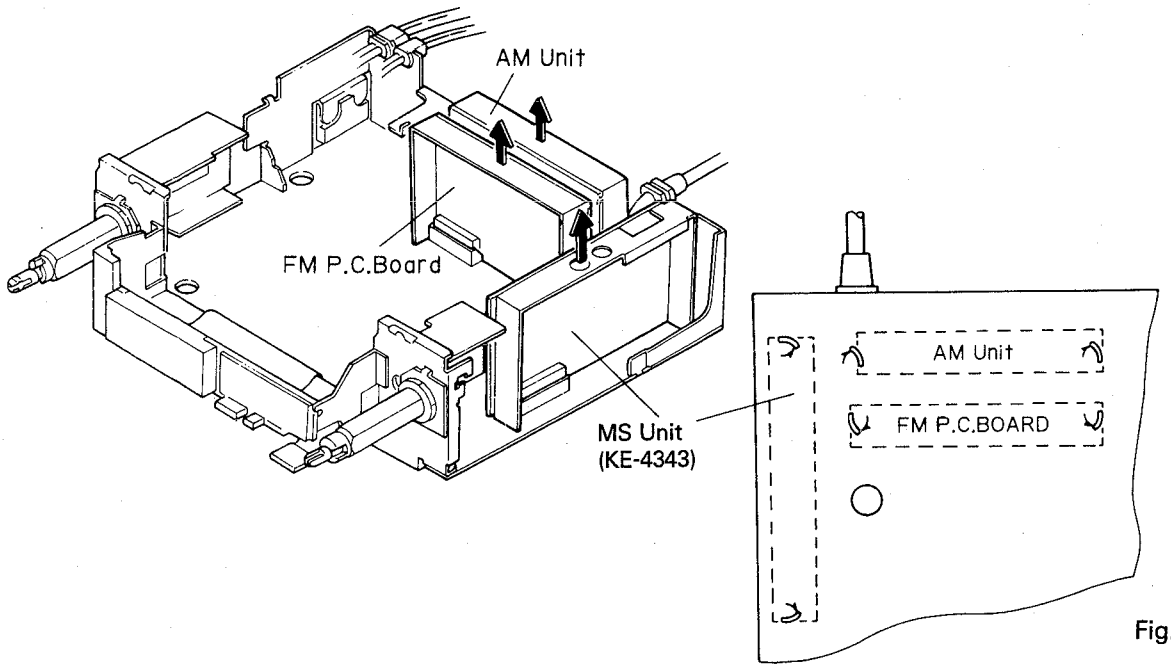


Fig. 4

7. ADJUSTMENT

- Connection Diagram

NOTICE:
Select C1 so that total capacity of 80pF is attained from the direction of the receiver jack.
Z: Output impedance of SSG.

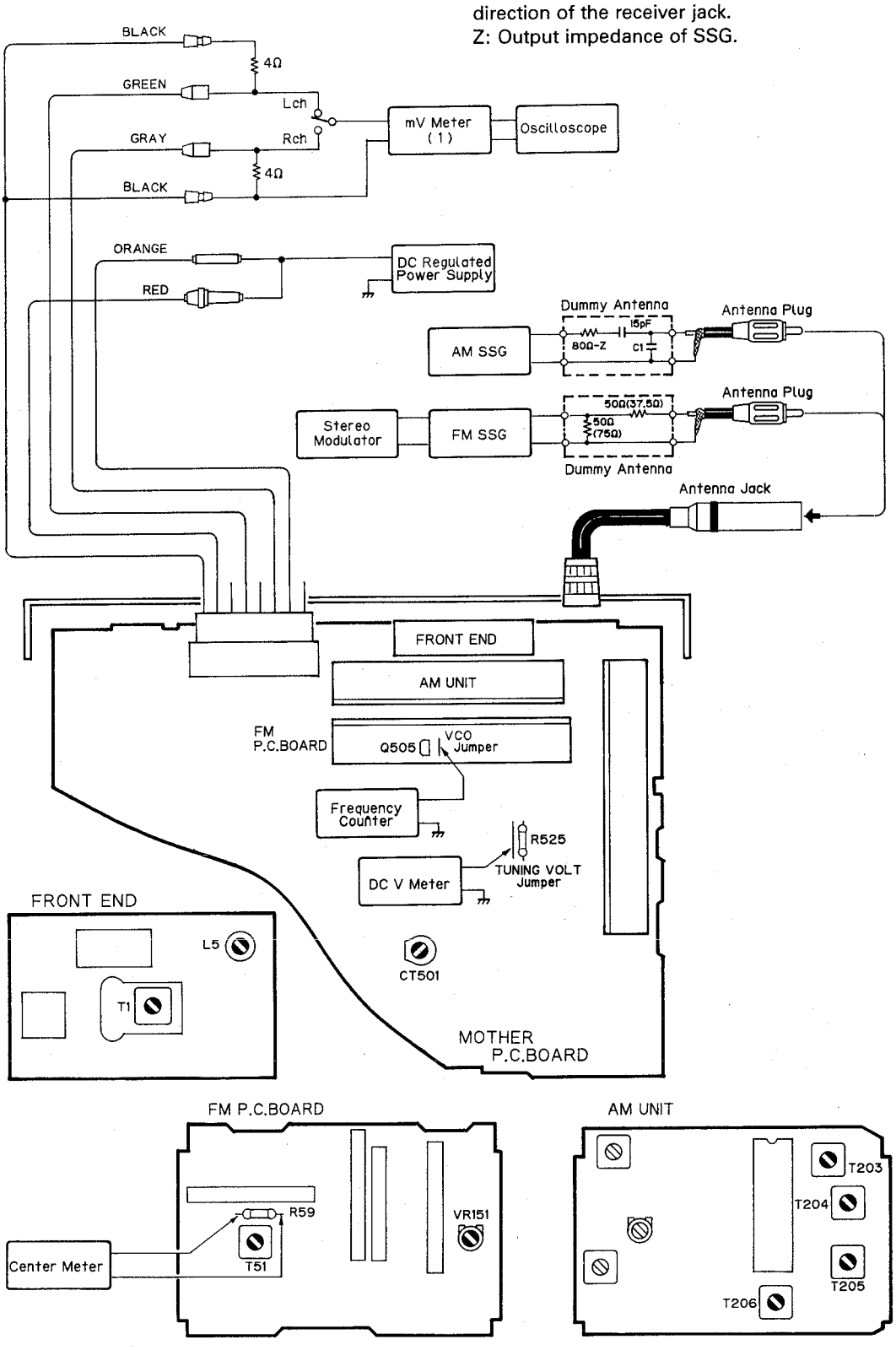


Fig. 5

7. 1 REFERRENCE OSCILLATION FREQUENCY ADJUSTMENT

No.		Displayed Frequency (kHz)	Adjusting Point	Adjustment Method (Switch Position)
1	Set the AM mode.	1,000	CT501	Frequency Counter: 11.71MHz±50Hz

7. 2 AM ADJUSTMENT

	No.	AM SSG(400Hz,30%)		Displayed Frequency (kHz)	Adjusting Point	Adjustment Method (Switch Position)
		Frequency(kHz)	Level(dB)			
Tracking	1			530	——	Verify that DC V Meter is more than 2V.
	2			1,620	T203	DC V Meter:Less than 6V
	3	1,000	20	1,000	T204,T205, T206	mV Meter(1):Maximum

7. 3 FM ADJUSTMENT ※ Stereo MOD.: 1kHz,L+R = 90% , Pilot = 10%

	No.	FM SSG(400Hz,100%)		Displayed Frequency (MHz)	Adjusting Point	Adjustment Method (Switch Position)
		Frequency(MHz)	Level(dB)			
IF	1	98.1	60	98.1	T51	Center Meter:0
Tracking	1			107.9	L5	DC V Meter:Less than 7.4V
	2			87.9	——	DC V Meter:More than 0.7V
	3	98.1	5 — 10	98.1	T1	mV Meter(1):Maximum
Auto Level	1	98.1※	35	98.1	VR151	mV Meter(1):Separation 5dB

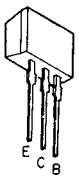
• ICs and Transistors

2SD667

2SC2026
2SC2498

2SA608SP
2SA1048
2SA1150
2SC1740S
2SC2458
2SC3113

2SC3623A



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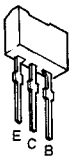

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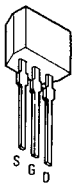

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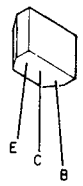
DTC124ES
DTC143TS



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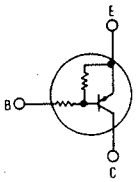

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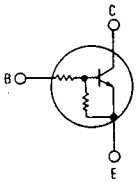

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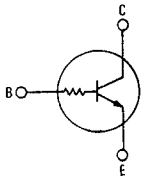

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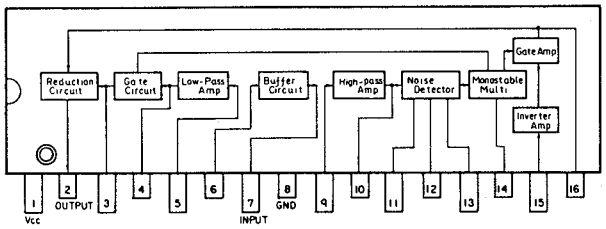

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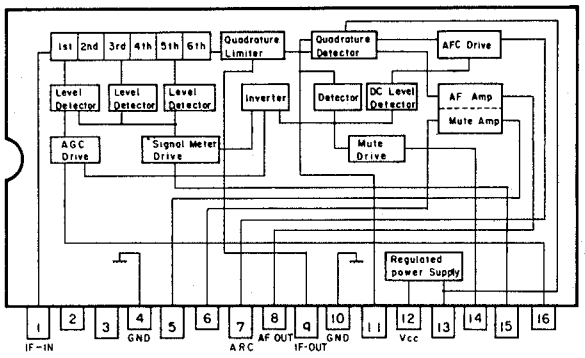

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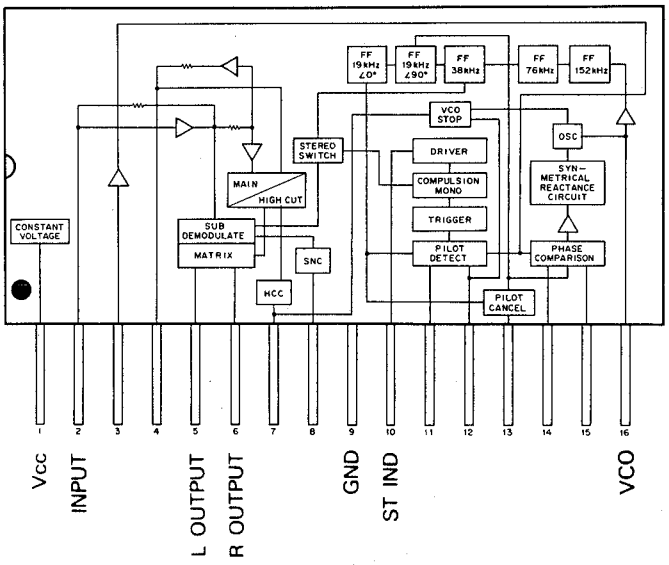

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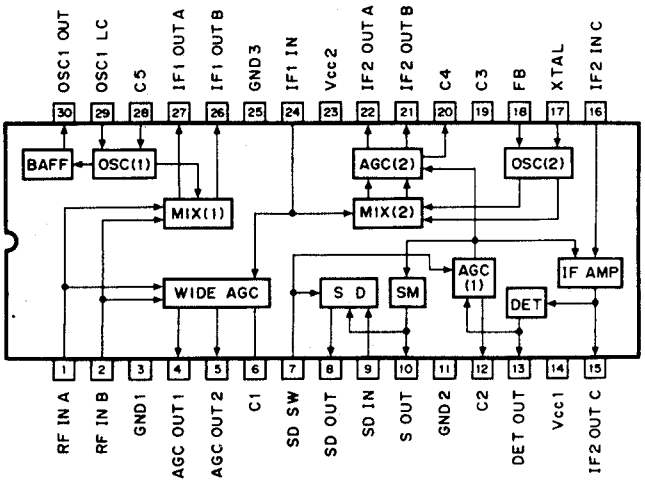

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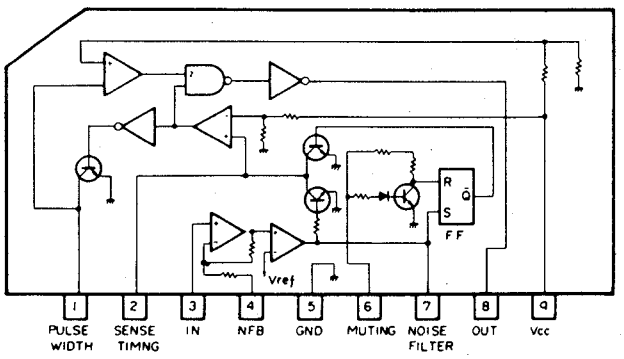

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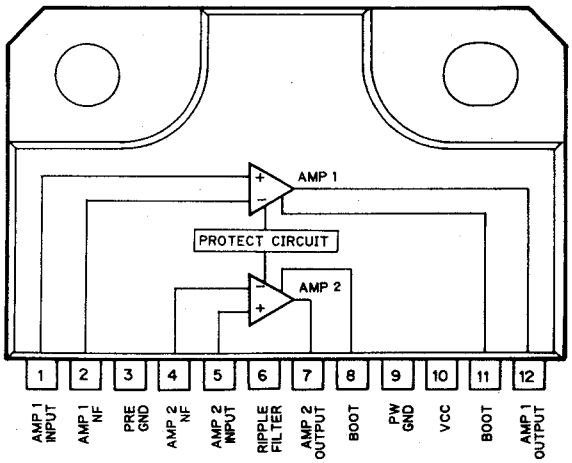

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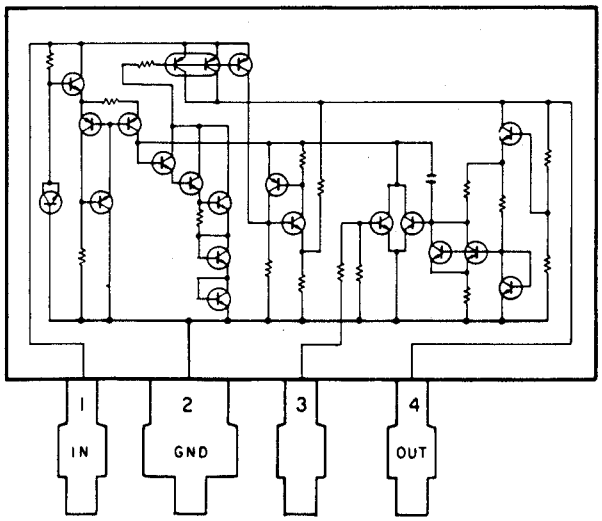
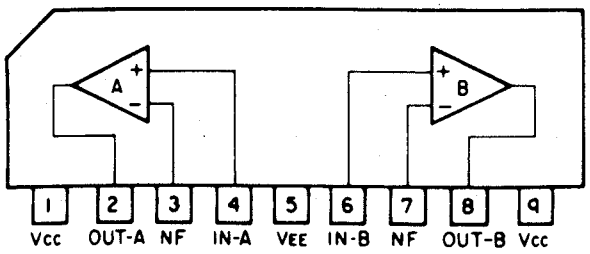
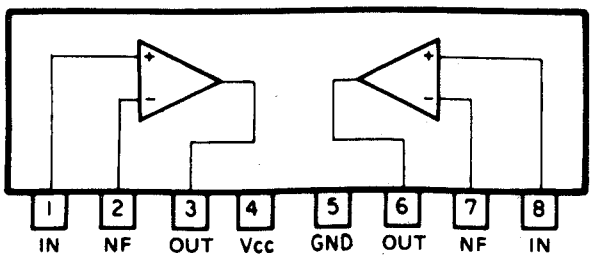


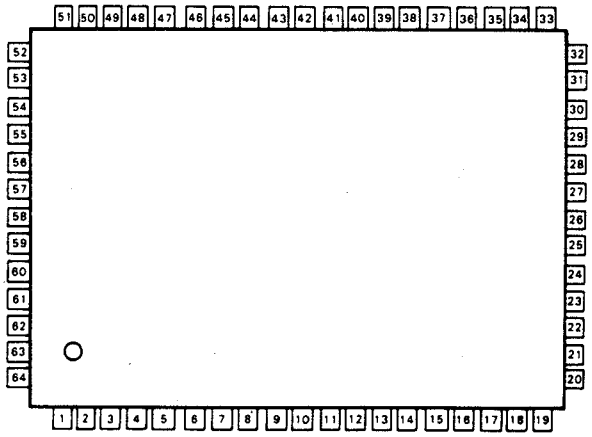
TA75558S



M51522AL

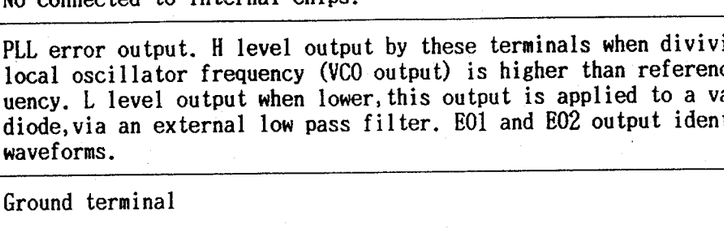


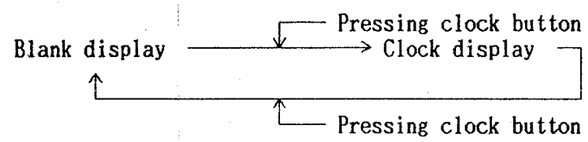
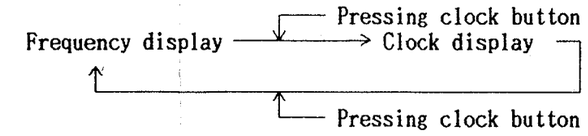
*PD4132



*IC's marked by * are MOS type.*
Be careful in handling them because they are very liable to be damaged by electrostatic induction.

● Pin Function (PD4132)

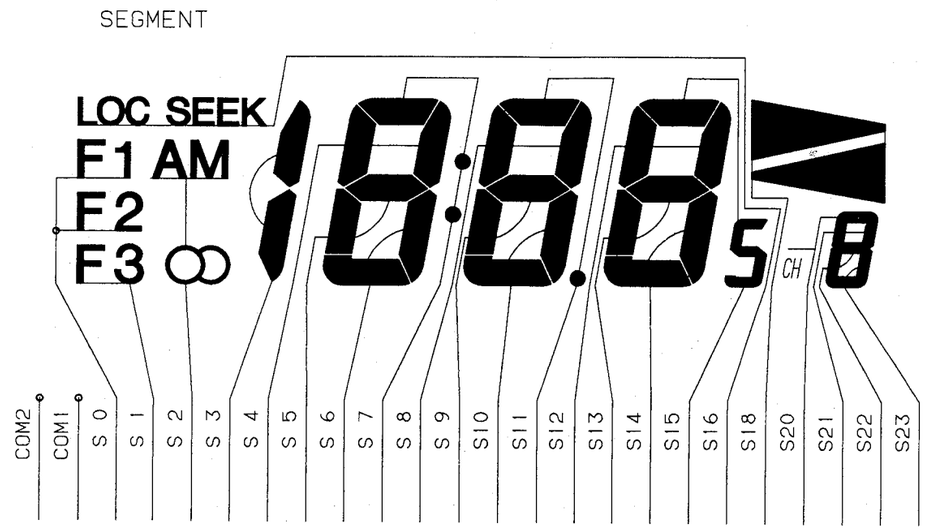
Pin No.	Pin Name	I/O	Function and Operation
1	NC		No connected to internal chips.
2 3	EO1 EO2	Output	PLL error output. H level output by these terminals when divivision of local oscillator frequency (VCO output) is higher than reference frequency. L level output when lower, this output is applied to a varactor diode, via an external low pass filter. EO1 and EO2 output identical waveforms.
4 8	GND GND		Ground terminal
5	AM	Input	AM VCO input Inputs 0.6−15MHz (0.3Vp-p MIN) local oscillator reference frequency (VCO output). This terminal is active when direct division system is selected.
6	FM	Input	FM VCO input Inputs 15−150MHz (0.5Vp-p MIN) local oscillator reference frequency (VCO output). This terminal is active when swallow counter method is selected.
7	CE	Input	Chip Enable Device selector signal input. H level during normal device operation, L level when deivce is not being used. PLL is disable status while this terminal is L level. For models without clocks, internal clock and CPU operation is halted while this terminal is L level, and memory is maintained by low demand current (10 μA MAX). Change of CE terminal from L to H results in device reset and the program to start from address 0.
9	FM/$\overline{\text{AM}}$ (DIRC-HG)	Output	TAPE MODE (TAPE 14 pin "H") Each time the DIRECTION button is pressed, this pin output the signal shown in the following timing chart.  TUNER MODE (TAPE 14 pin "L") When the tape input pin (pin 14) is low (i.e., the tuner is selected), pin 9 control the power of the FM and AM circuits. The output of this pin is determined as follows: "H":FM ON "L":AM ON
10	$\overline{\text{SEEK}}$	Output	Tuner SEEK output. "L":SEEK, BSM, and P.SCAN

Pin No.	Pin Name	I/O	Function and Operation
11 21	LOCL LOCH (MS)	Output Output	TUNER MODE (TAPE 14 pin "L") Halt sensitivity switching terminals controlled by LOC and BSM keys. |	DX· SEEK (PSCN) | LOC· SEEK | BSM-L | BSM-M | BSM-H | | LOCL | L | H | L | H | H | | LOCH | L | L | L | L | H | |	During broadcast reception | | LOCL | L | | LOCH | L | TAPE MODE (TAPE 14 pin "H") (MS) pin 21 ·····"H":MS ON "L":MS OFF
12	SD	Input	Judges whether or not a FM broadcast is present during auto tuning. A FM broadcast is judged as being present when H level is input.
13	$\overline{\text{ST}}$	Input	Inputs stereo broardcast detection signal. Stereo is detected when input signal is L level, and "Stereo" indicator is displayed. Display is cleared when input signal is at H level. "Stereo" indicator is off during mute signal output.
14	TAPE	Input	Tape signal input used to change the display modes depending on the clock switch setting. If this pin is set to a high level, the display indicates the tape motion. When this pin is high, the pressing of the clock button causes the following actions:  When this pin is low, the pressing of the clock button causes the following actions: 
15	IF OFF SET	Input	Not used.

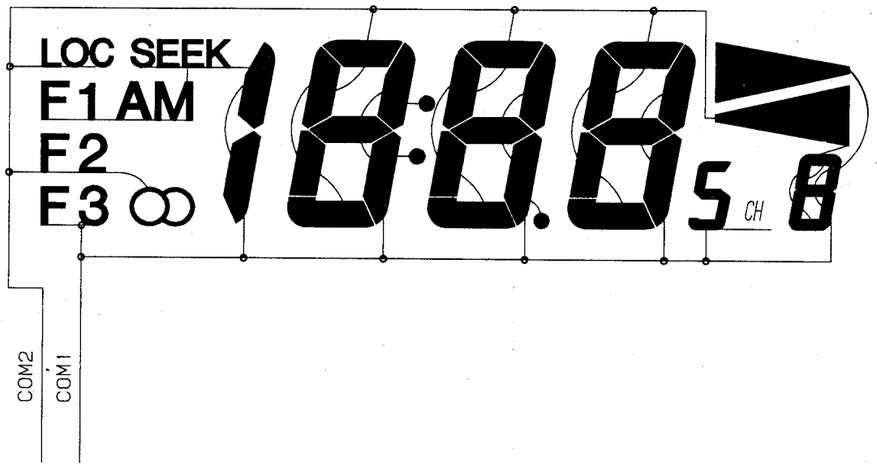
Pin No.	Pin Name	I/O	Function and Operation
16	AM IF	Input	AM band IF counter input terminal. Used for broadcast detection in AM band auto tuning.
17	F/$\overline{R}$	Input	When the tape input(pin14)is high, this pin accepts a tape motion signal. When this is H level the "▷"(FWD) indicator lights;when L level, the " ◁ "(REV) indicator.
18 19	KST4 KST5	Output Output	Key return signal source output.
20	$\overline{MUTE}$	Output	This muting output terminal,set to active low,eliminates the shock noise when the PLL lock is disengaged.
22	NS	Output	NS(Noise Supprssor) ON/OFF output terminal. While the deck is in operation, the contents of "NS ON/OFF memory" is output from this pin. This pin goes H level when NS is on.(KE-3525)
23	B/C	Output	Not used.
24 25	XO XI	Output Input	Quartz oscillator connection terminal. 4.5MHz quartz crystal used.
26 58	VDD VDD		Device power supply terminal. 5V ±10% voltage supplied.
27	METAL	Output	Each time the METAL button is pressed,this pin alternates between H and L levels,switching the METAL indicator on and off. "H":METAL "L":NORMAL
28 | 31	KST3 | KST0	Output	Key return signal source output
32 | 55	S23 | S0	Output	Segment signal output terminal to LCD. LCD display performed using COM1,COM2 matrices.
56 57	COM1 COM2	Output Output	Common signal terminal to LCD. GND,1/2VDD,VDD values(5ms interval) output at 100Hz cycle. Segments between these terminals and S0−S23 with±VDD potential difference are lit.
59 | 62	K3 | K0	Input	Key matrix input.
63	SL	Input	Station level analog voltage input.
64	$\overline{INT}$	Input	Not used.

- LCD (CWW1054)

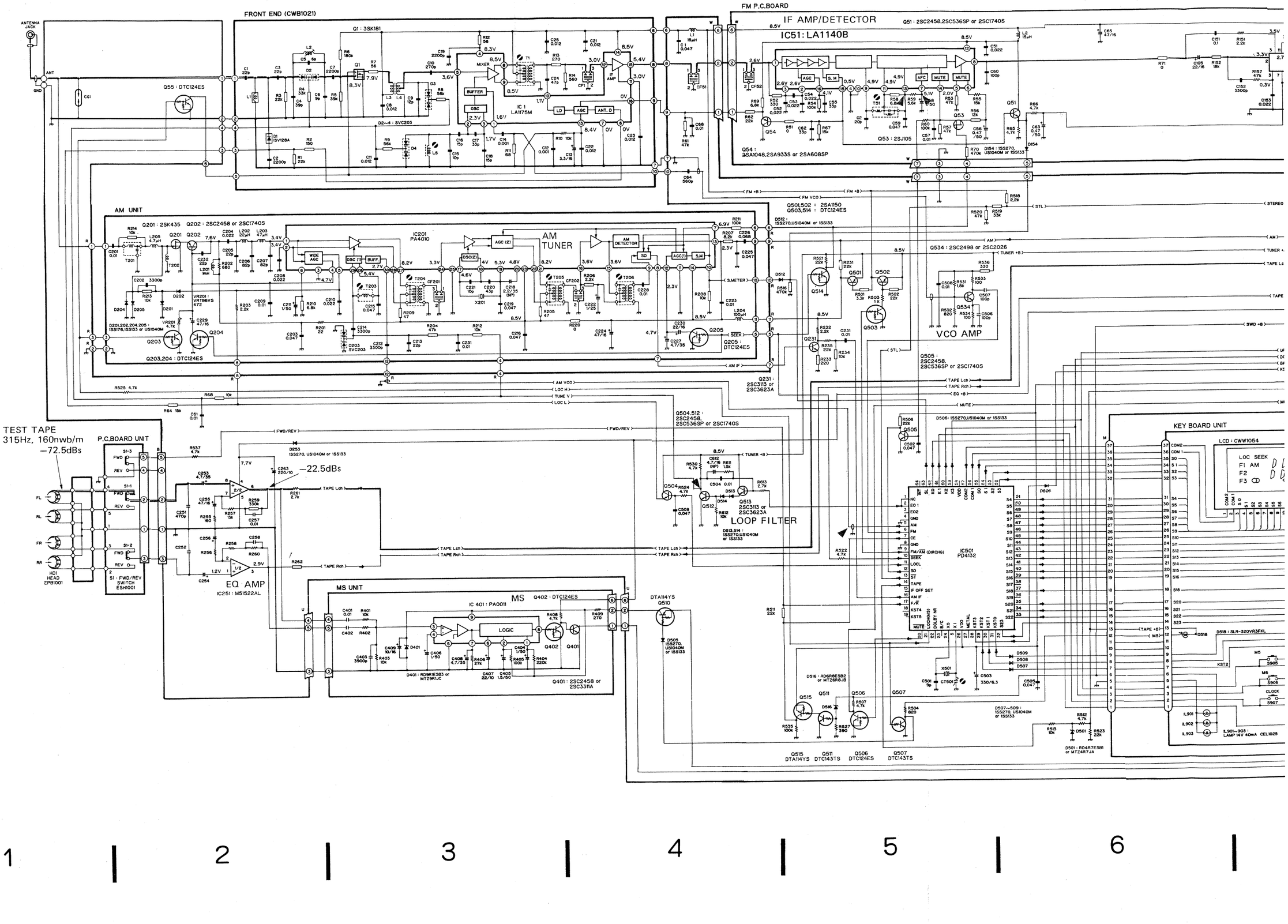
SEGMENT

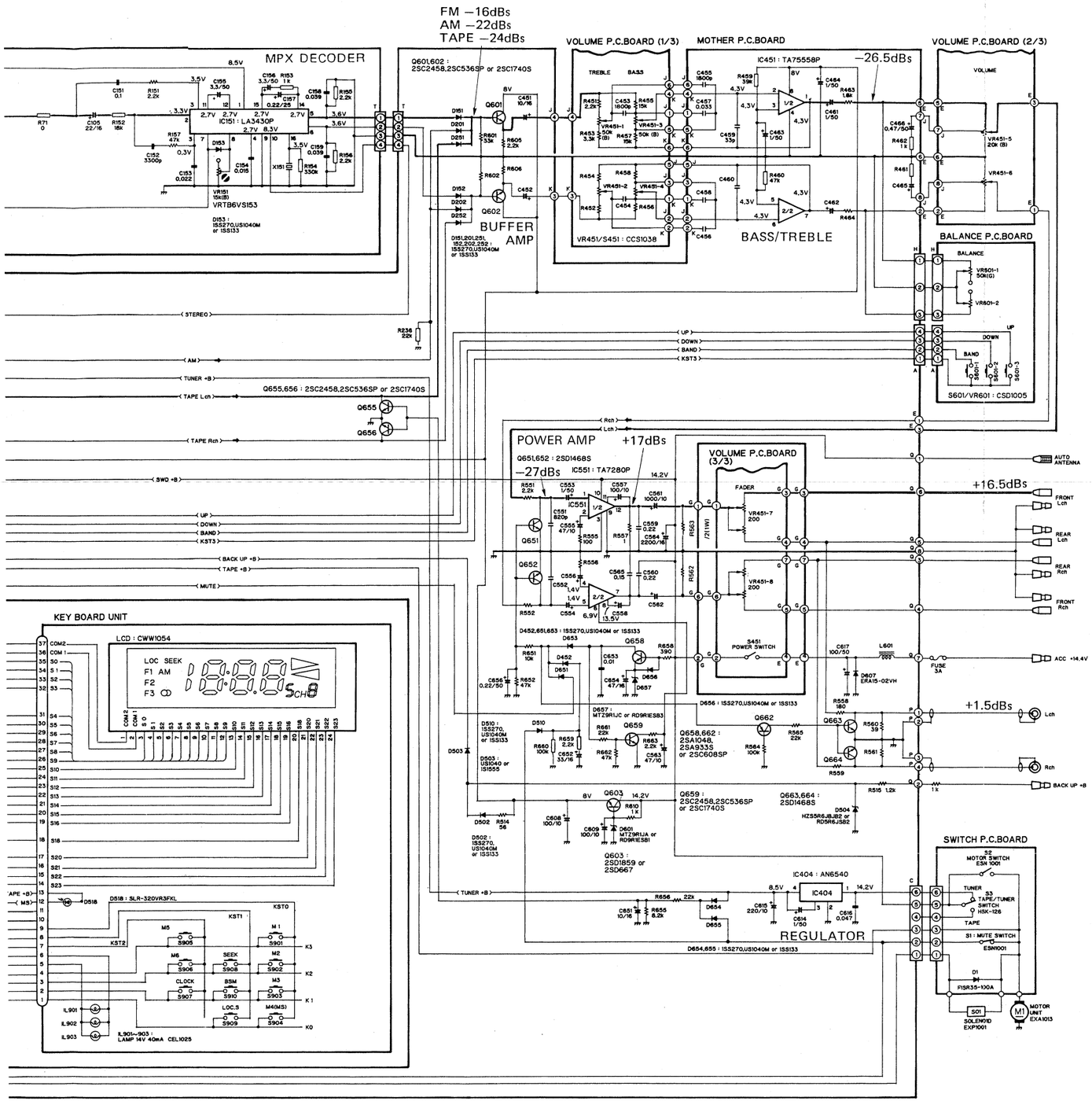


COMMON



8. SCHEMATIC CIRCUIT DIAGRAM (KE-4343)





P.C.Board Unit

Consists of
- Mother P.C.Board
- FM P.C.Board
- Volume P.C.Board
- Balance P.C.Board

NOTE :
- Indicates a chip resistor.
- Indicates a chip capacitor.
- Indicates a chip transistor.

SWITCHES:

SWITCH P.C.BOARD
S1: MUTE SWITCH ..... ON—OFF
S2: MOTOR SWITCH ..... ON—OFF
S3: TAPE/TUNER SWITCH ..... TAPE—TUNER

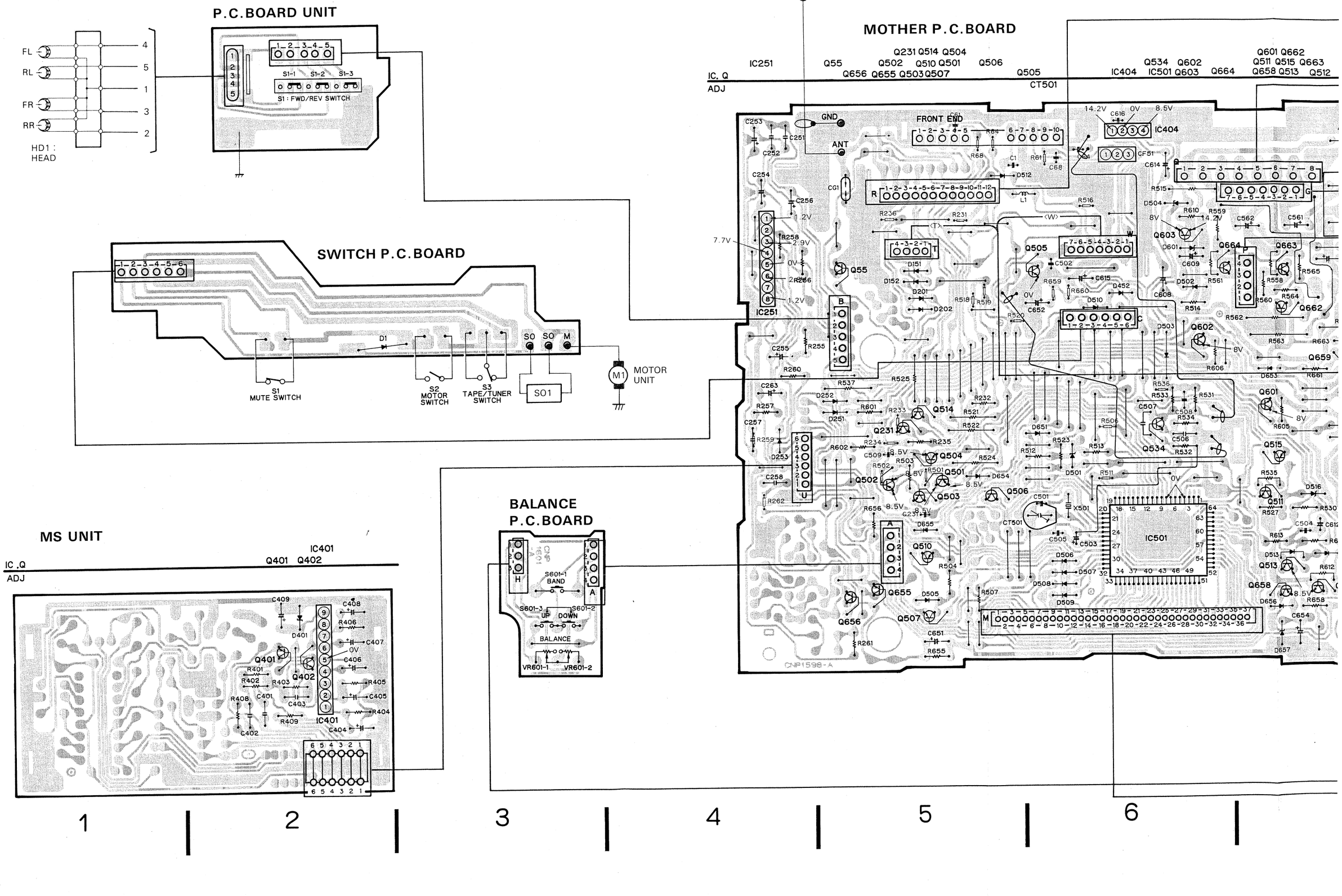
P.C.BOARD UNIT
S1: FWD/REV SWITCH ..... FWD—REV

VOLUME P.C.BOARD
S451: POWER SWITCH ..... ON—OFF

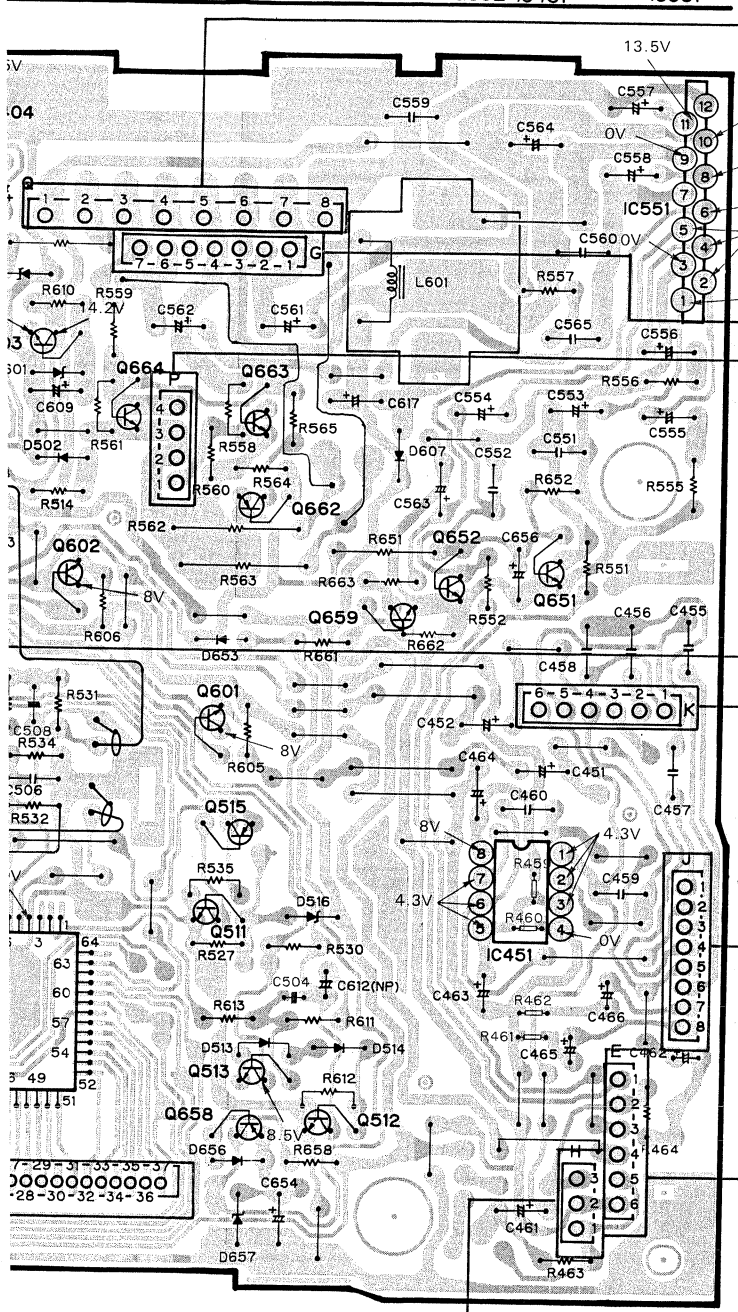
The underlined indicated the switch position.

Fig. 6

9. CONNECTION DIAGRAM (KE-4343)

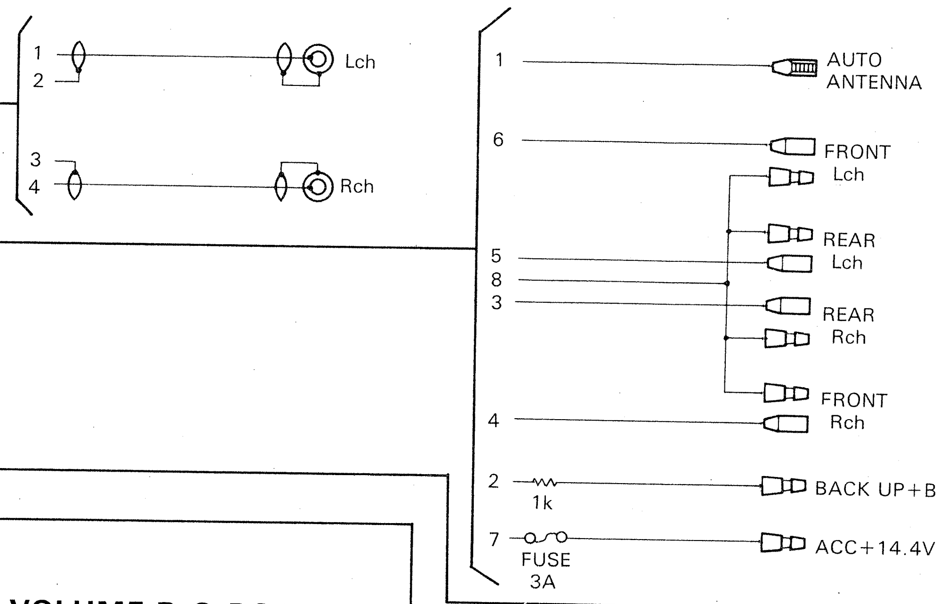


Q602 Q603 Q664 Q601 Q662 Q511 Q515 Q663 Q658 Q513 Q512 Q659 Q652 Q651 IC451 IC551

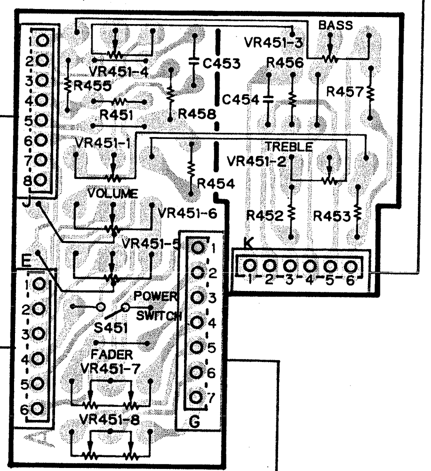


AM UNIT : IC201

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
3.4V	3.4V	0V	4.7V			6.9V	4.9V			0V	2.3V	2.3V	8.5V	3.6V
16	**17**	**18**	**19**	**20**	**21**	**22**	**23**	**24**	**25**	**26**	**27**	**28**	**29**	**30**
3.6V	4.6V	4V	5.3V	4.8V	8.2V	8.2V	8.5V	3.3V	0V	8.2V	8.2V	5.4V	5.4V	2.7V



VOLUME P.C.BOARD



FM P.C.BOARD : IC51

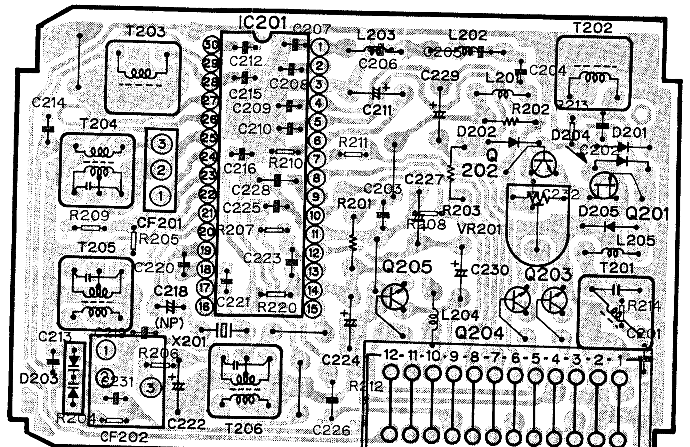
1	2	3	4	5	6	7	8
2.6V	2.6V	2.6V	0V	2.0V		5.1V	
9	**10**	**11**	**12**	**13**	**14**	**15**	**16**
4.9V	0V	4.9V	8.5V	4.9V		0.5V	4.1V

FM P.C.BOARD : IC151

1	2	3	4	5	6	7	8
8.5V	3.3V	3.5V	2.7V	3.6V	3.6V		
9	**10**	**11**	**12**	**13**	**14**	**15**	**16**
0V	8.3V	2.7V	2.7V	0.3V	2.7V	2.7V	3.5V

AM UNIT

IC, Q — IC201 Q205 Q202 Q204 Q203 Q201
ADJ — T204 T203 T205 T206

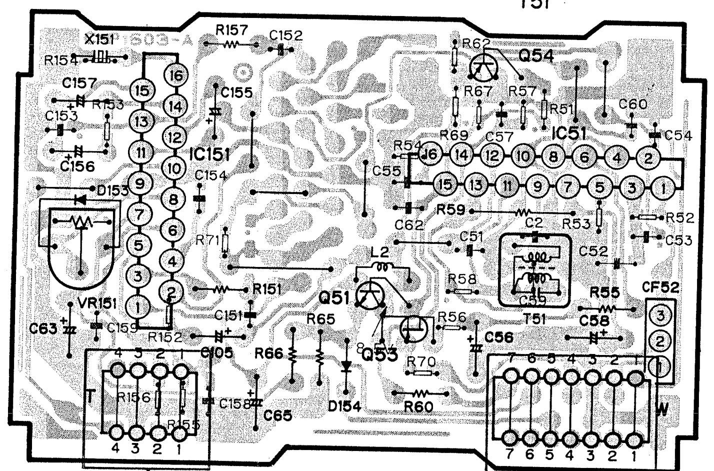


A

B

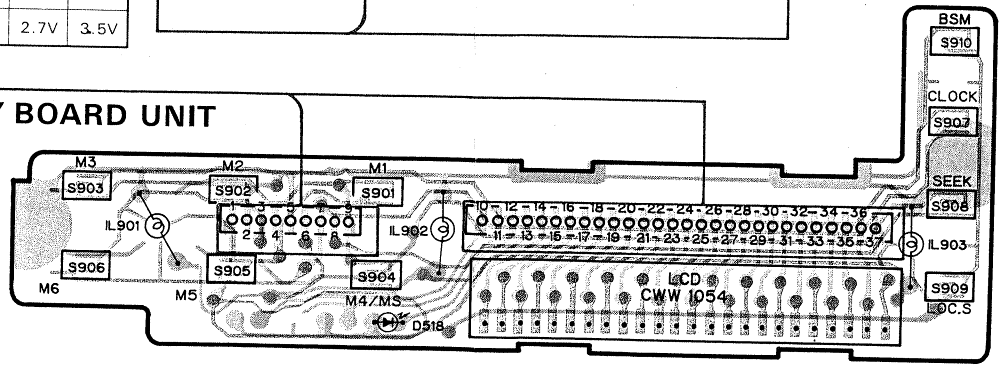
FM P.C.BOARD

IC, Q — IC151 Q51 Q53 Q54 IC51
ADJ — VR151 T51



C

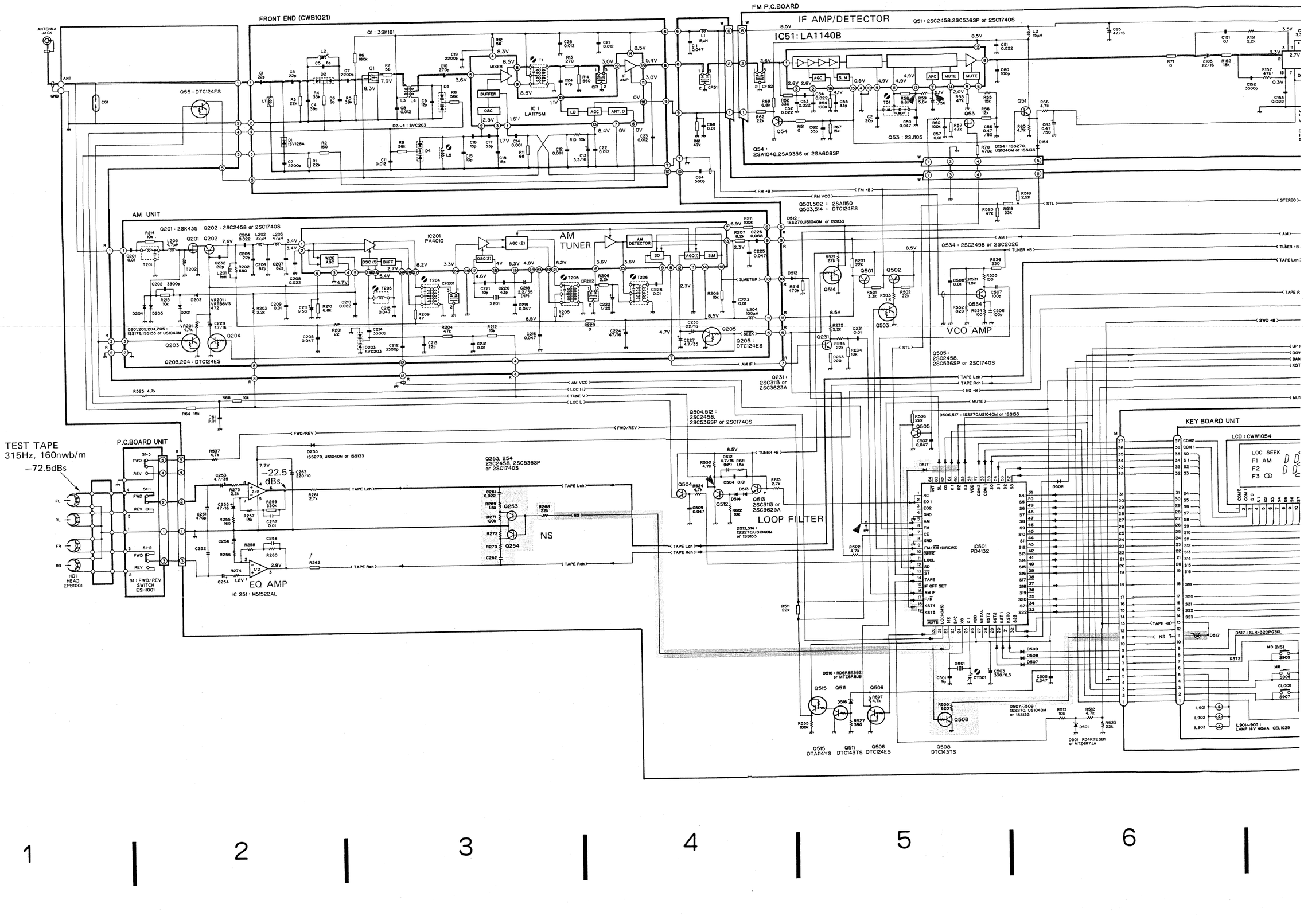
KEY BOARD UNIT

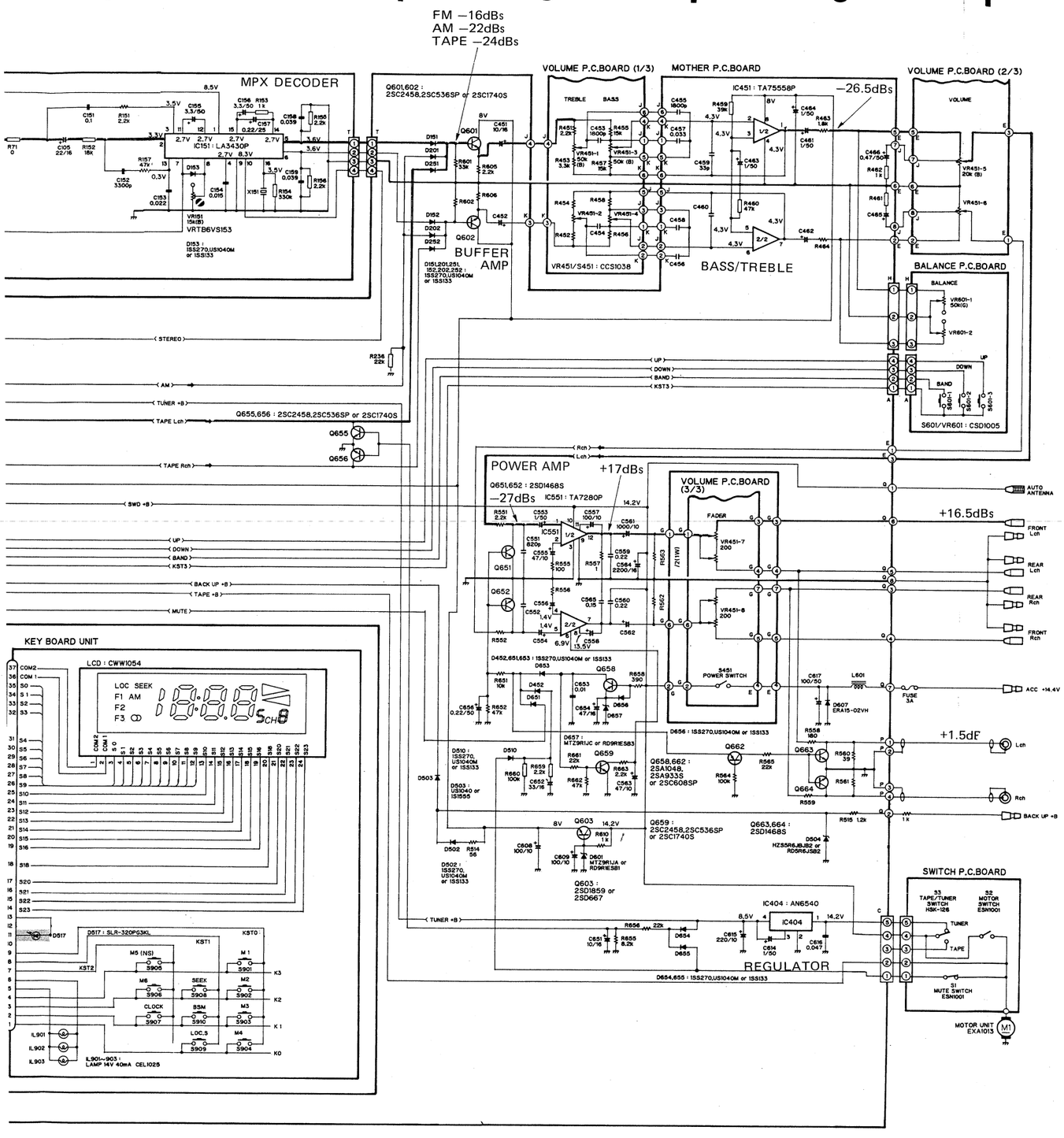


D

Fig. 7

10. SCHEMATIC CIRCUIT DIAGRAM (KE-3525, KE-3333)





P.C.Board Unit

Consists of
- Mother P.C.Board
- FM P.C.Board
- Volume P.C.Board
- Balance P.C.Board

NOTE :

Indicates a chip resistor.
Indicates a chip capacitor.
Indicates a chip transistor.

SWITCHES:

SWITCH P.C.BOARD
S1: MUTE SWITCH ..... ON—OFF
S2: MOTOR SWITCH ..... ON—OFF
S3: TAPE/TUNER SWITCH ..... TAPE—TUNER

P.C.BOARD UNIT
S1: FWD/REV SWITCH ..... FWD—REV

VOLUME P.C.BOARD
S451: POWER SWITCH ..... ON—OFF

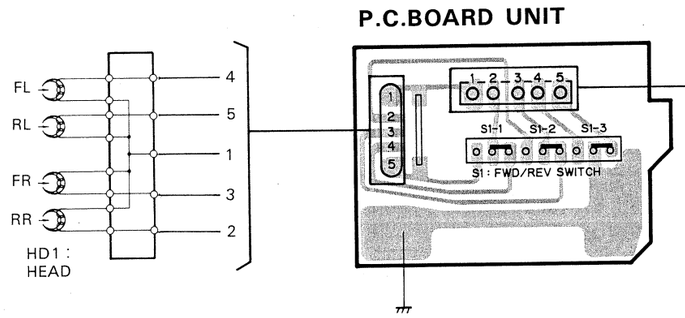
The underlined indicated the switch position.

The shematic circuit diagram for KE-3333 is the same as the KE-3525 except for following points:

1. D517 (Mother P.C.Board) has been deleted from KE-3525.
2. Q253 and Q254 (Mother P.C.Board) have been deleted from KE-3525.
3. R269 and R270 (Mother P.C.Board) have been deleted from KE-3525.
4. R271 and R272 (Mother P.C.Board) have been deleted from KE-3525.
5. C261 and C262 (Mother P.C.Board) have been deleted from KE-3525.
6. R268 (Mother P.C.Board) has been deleted from KE-3525.
7. Q508 (Mother P.C.Board) has been deleted from KE-3525.
8. R505 (Mother P.C.Board) has been deleted from KE-3525.
9. D517 (Key Board Unit) has been deleted from KE-3525.

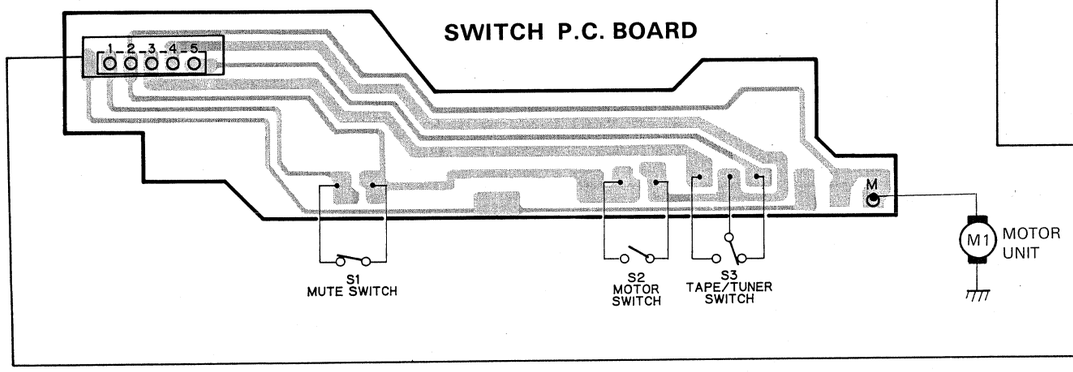
Fig. 8

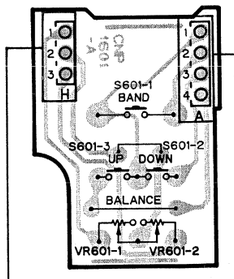
11. CONNECTION DIAGRAM (KE-3525, KE-3333)

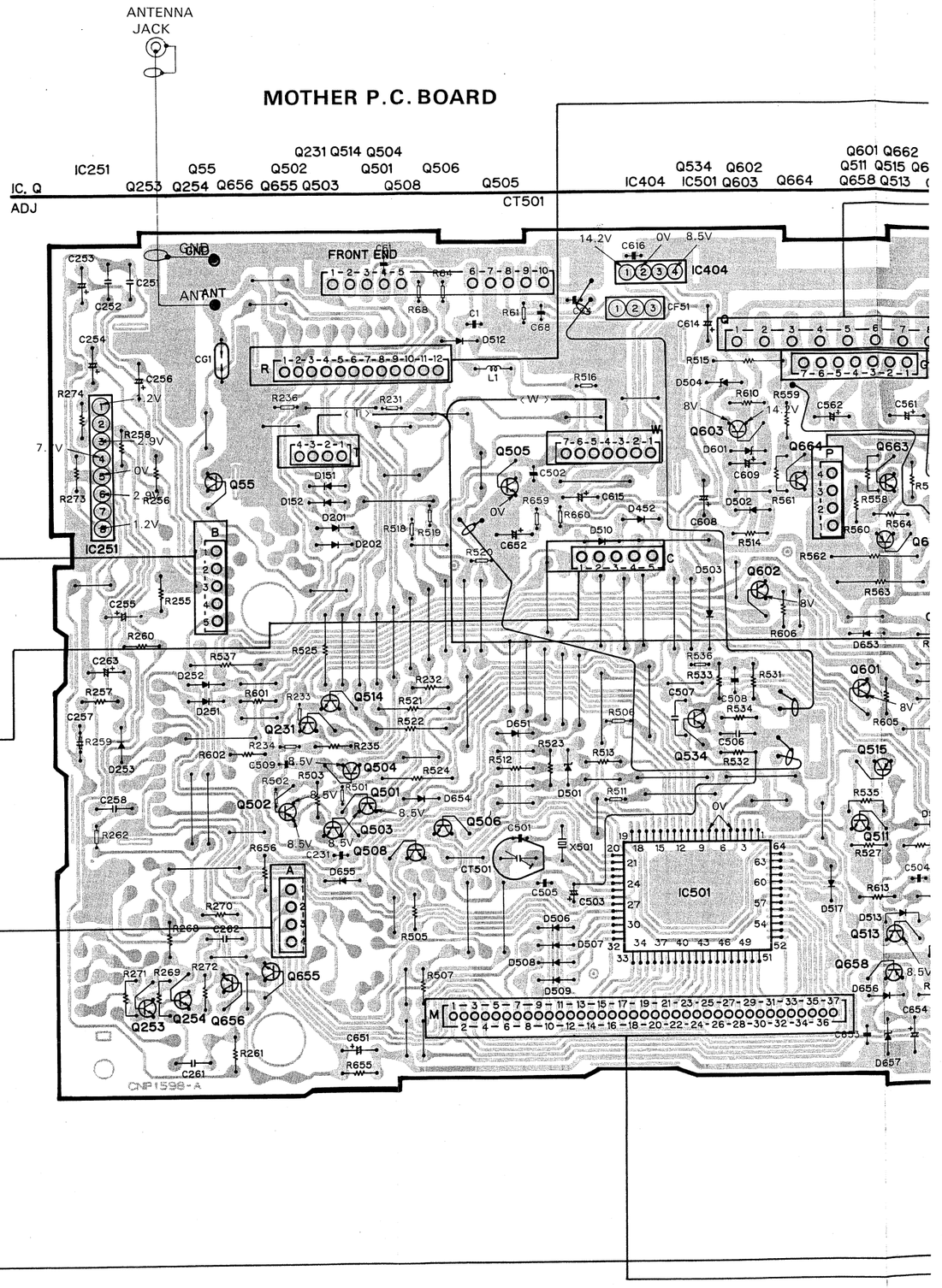


NOTE:

	KE-3525	KE-3333
D517	Added	Deleted
Q508	Added	Deleted
R505	Added	Deleted
R268	Added	Deleted
Q253, 254	Added	Deleted
R269–272	Added	Deleted
C261, 262	Added	Deleted







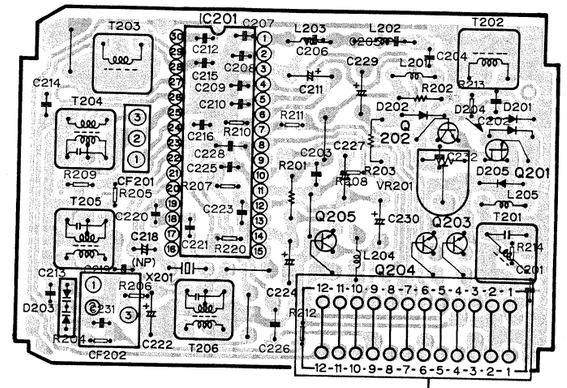
AM UNIT : IC201

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
3.4V	3.4V	0V	4.7V			6.9V	4.9V			0V	2.3V	2.3V	8.5V	3.6V
16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
3.6V	4.6V	4V	5.3V	4.8V	8.2V	8.2V	8.5V	3.3V	0V	8.2V	8.2V	5.4V	5.4V	2.7V

AM UNIT

IC. Q — IC201 — Q205 — Q202 Q204 Q203 Q201

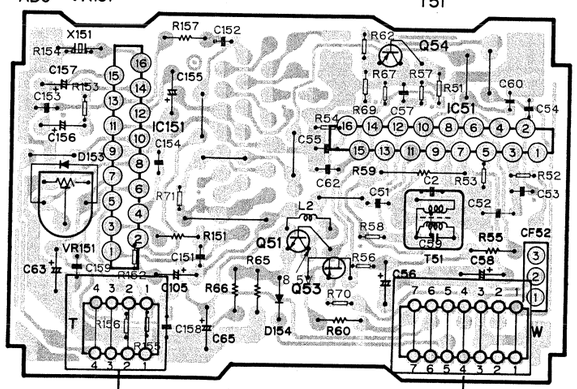
ADJ — T204 T203 T206 T205



FM P.C. BOARD

IC. Q — IC151 — Q51 Q53 Q54 — IC51

ADJ — VR151 — T51

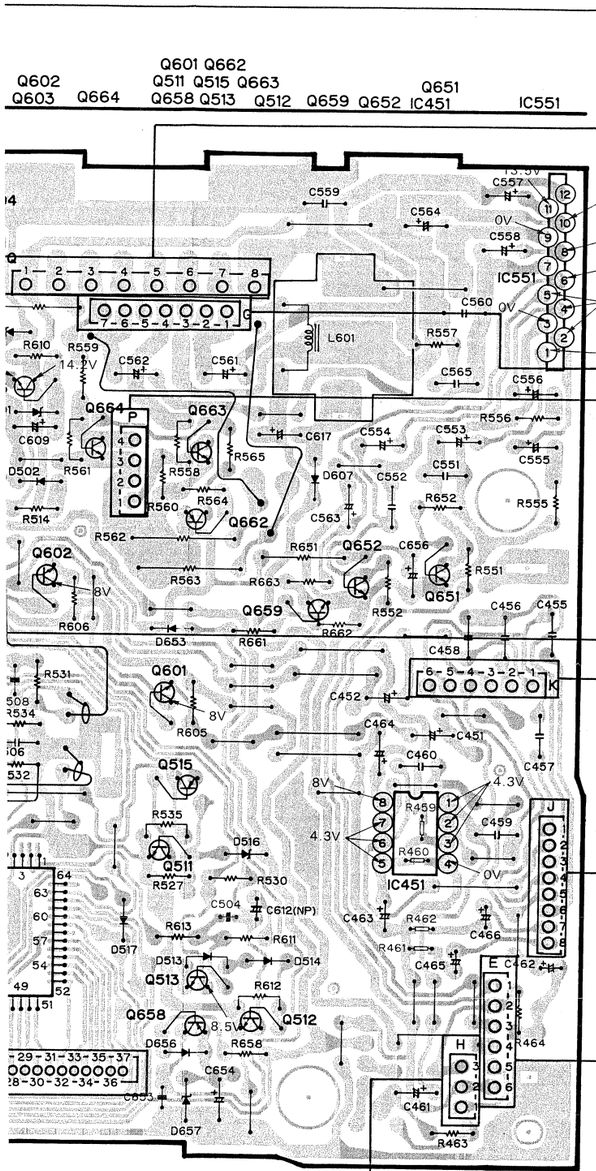


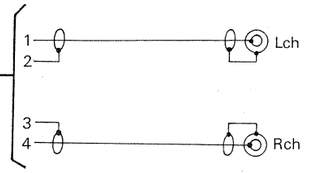
FM P.C. BOARD : IC51

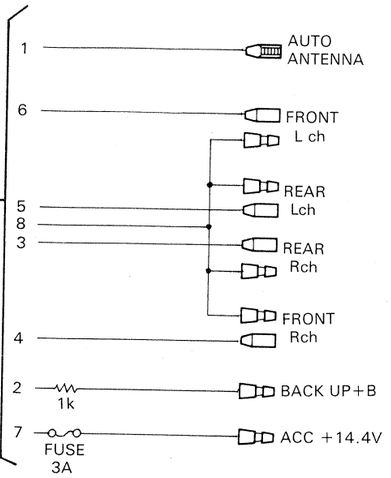
1	2	3	4	5	6	7	8
2.6V	2.6V	2.6V	0V	2.0V		5.1V	
9	10	11	12	13	14	15	16
4.9V	0V	4.9V	8.5V	4.9V		0.5V	4.1V

FM P.C. BOARD : IC151

1	2	3	4	5	6	7	8
8.5V	3.3V	3.5V	2.7V	3.6V	3.6V		
9	10	11	12	13	14	15	16
0V	8.3V	2.7V	2.7V	0.3V	2.7V	2.7V	3.5V

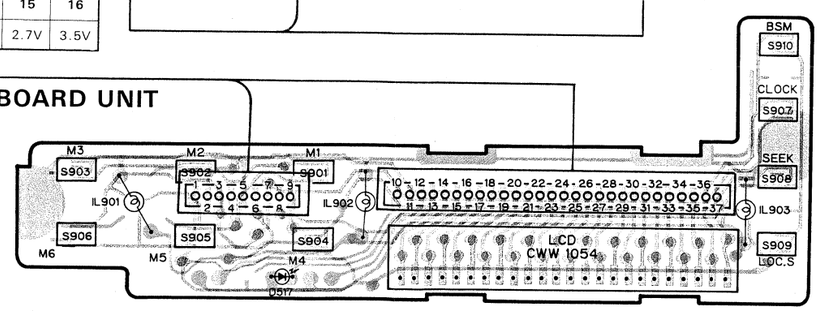






VOLUME P.C. BOARD

KEY BOARD UNIT

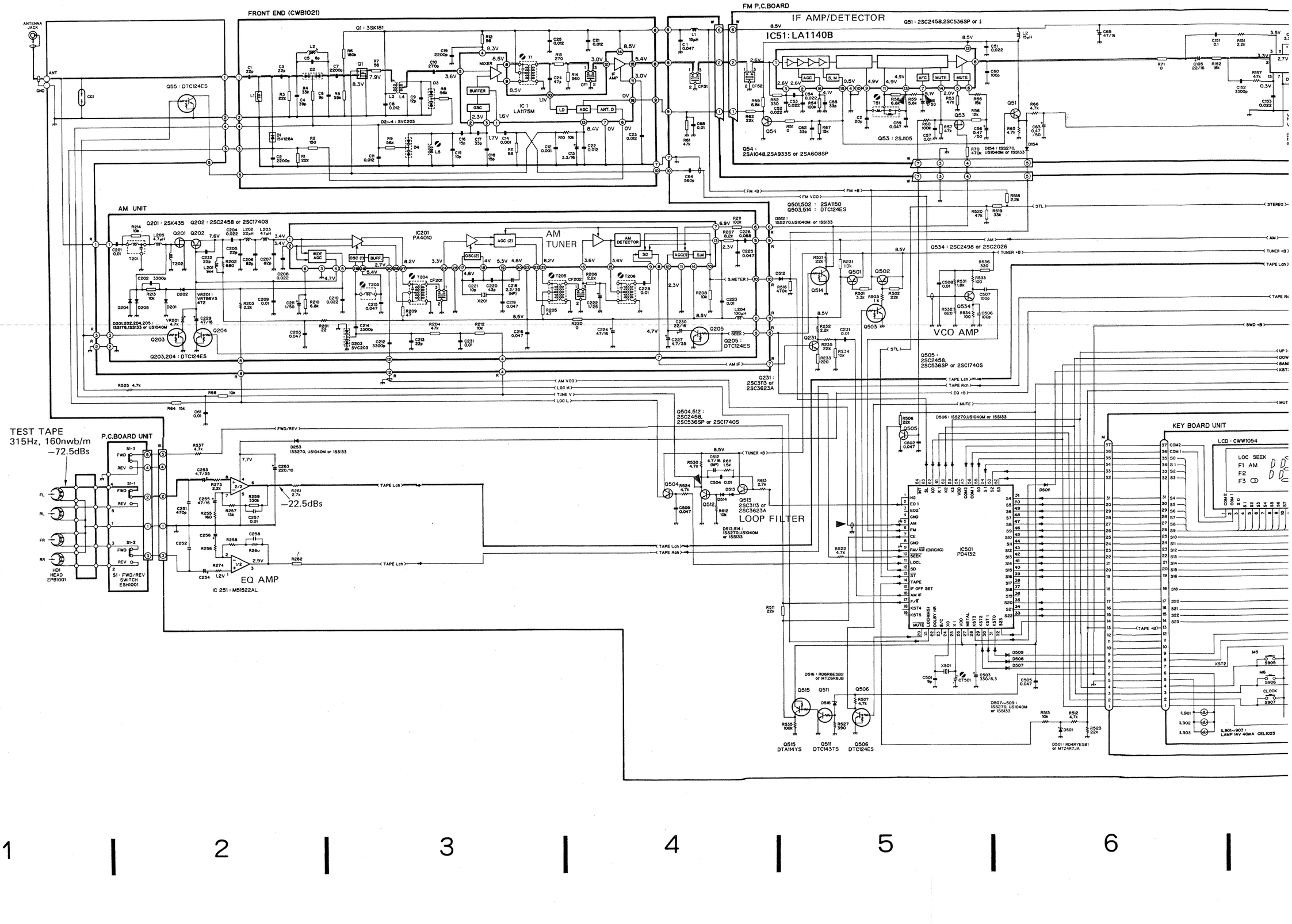


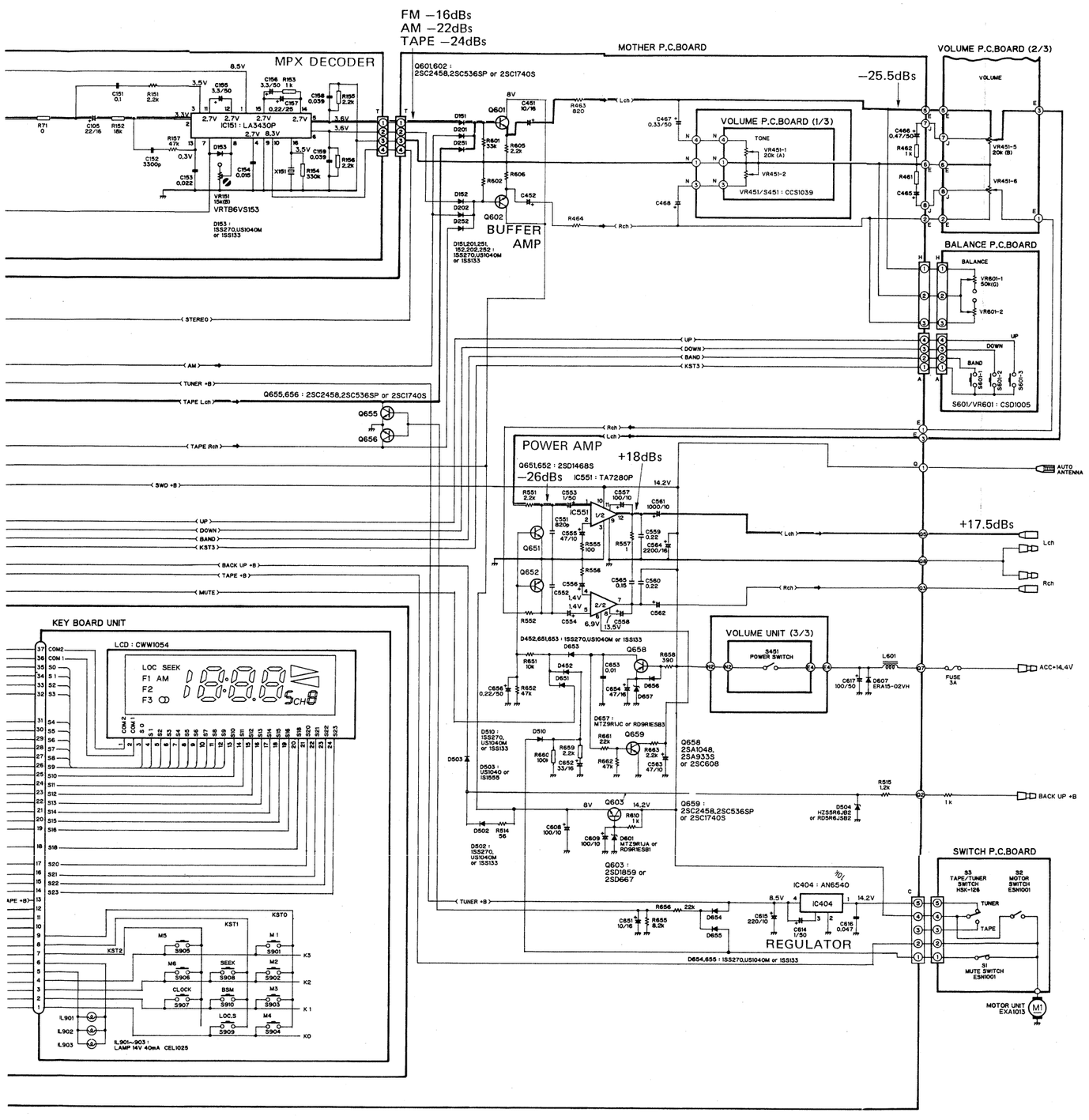
NOTE:

	KE-3525	KE-3333
D517	Added	Deleted
S905	M5/NS	M5

Fig. 9

12. SCHEMATIC CIRCUIT DIAGRAM (KE-2323)





P.C.Board Unit

Consists of
- Mother P.C.Board
- FM P.C.Board
- Volume P.C.Board
- Balance P.C.Board

NOTE :

Indicates a chip resistor.
Indicates a chip capacitor.
Indicates a chip transistor.

SWITCHES:

SWITCH P.C.BOARD
S1: MUTE SWITCH ..... ON—OFF
S2: MOTOR SWITCH ..... ON—OFF
S3: TAPE/TUNER SWITCH ..... TAPE—TUNER

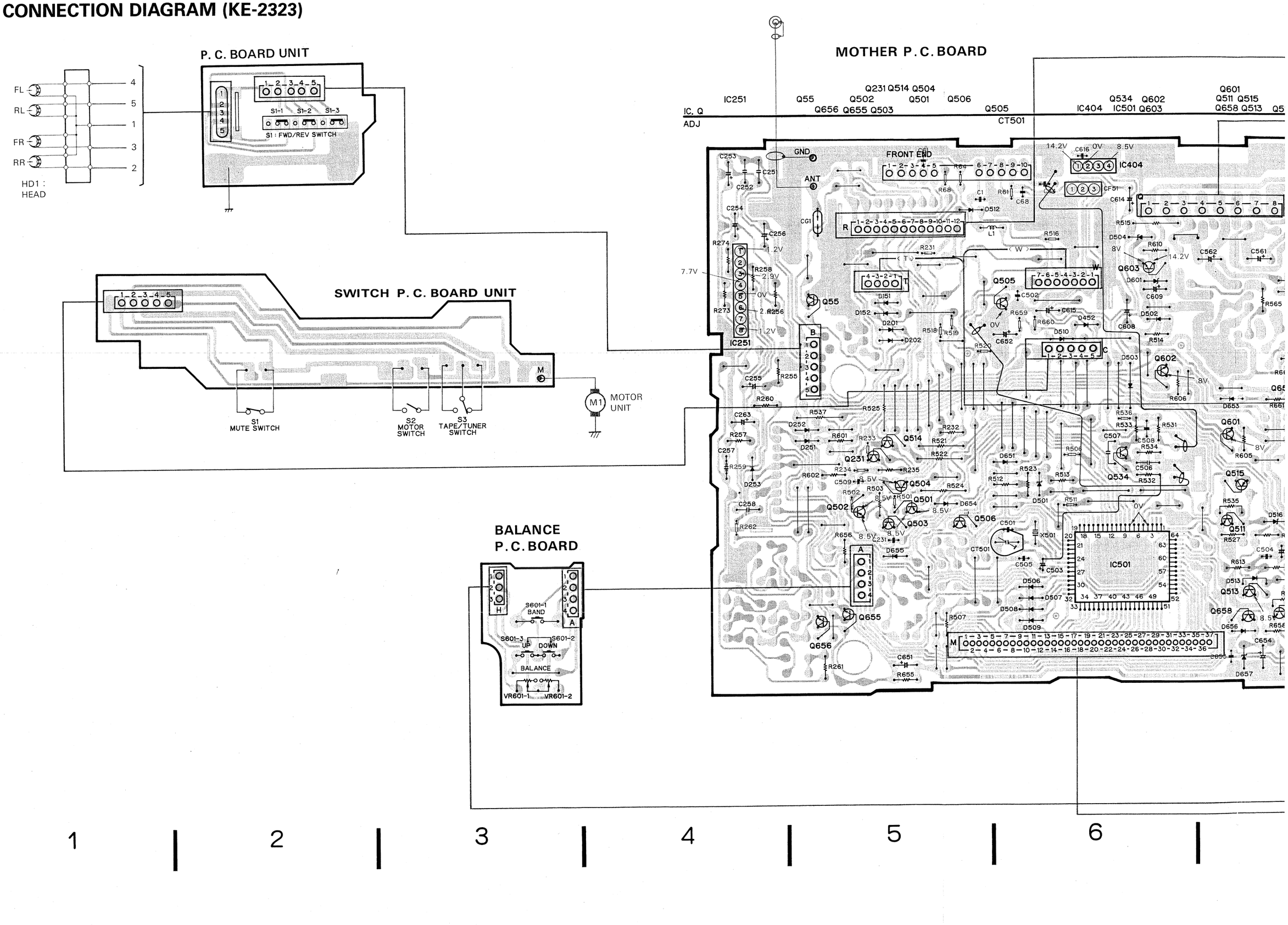
P.C.BOARD UNIT
S1: FWD/REV SWITCH ..... FWD—REV

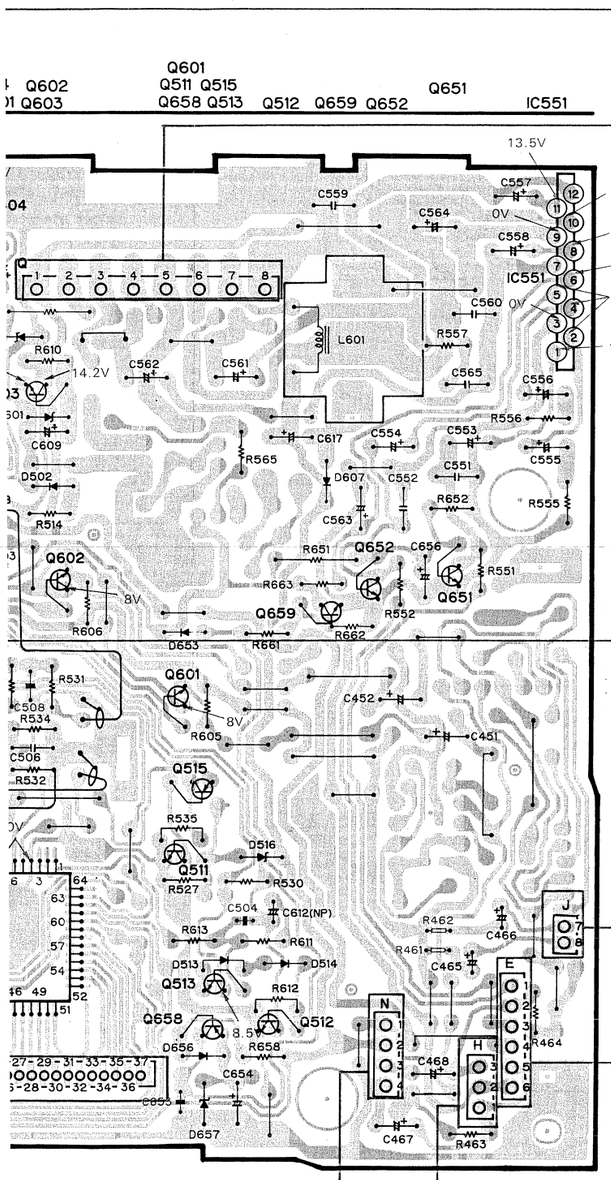
VOLUME P.C.BOARD
S451: POWER SWITCH ..... ON—OFF

The underlined indicated the switch position.

Fig. 10

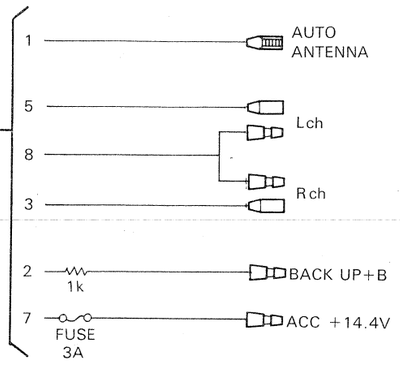
13. CONNECTION DIAGRAM (KE-2323)



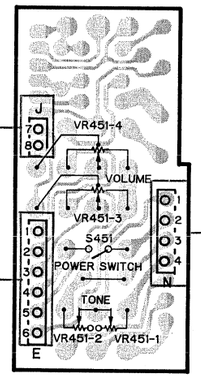


AM UNIT : IC201

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
3.4V	3.4V	0V	4.7V			6.9V	4.9V			0V	2.3V	2.3V	8.5V	3.6V
16	17	18	19	20	21	22	23	24	25	26	27	28	29	20
3.6V	4.6V	4V	5.3V	4.8V	8.2V	8.2V	8.5V	3.3V	0V	8.2V	5.42V	5.4V	5.4V	2.7V



VOLUME P.C.BOARD



FM P.C.BOARD : IC51

1	2	3	4	5	6	7	8
2.6V	2.6V	2.6V	0V	2.0V		5.1V	
9	10	11	12	13	14	15	16
4.9V	0V	4.9V	8.5V	4.9V		0.5V	4.1V

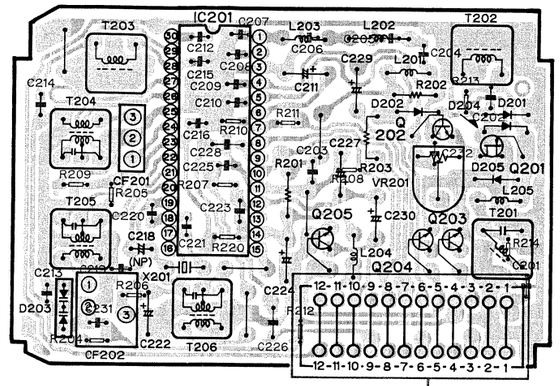
FM P.C.BOARD : IC151

1	2	3	4	5	6	7	8
8.5V	3.3V	3.5V	2.7V	3.6V	3.6V		
9	10	11	12	13	14	15	16
0V	8.3V	2.7V	2.7V	0.3V	2.7V	2.7V	3.5V

AM UNIT

IC. Q — IC201 — Q205 — Q202 Q204 Q203 Q201

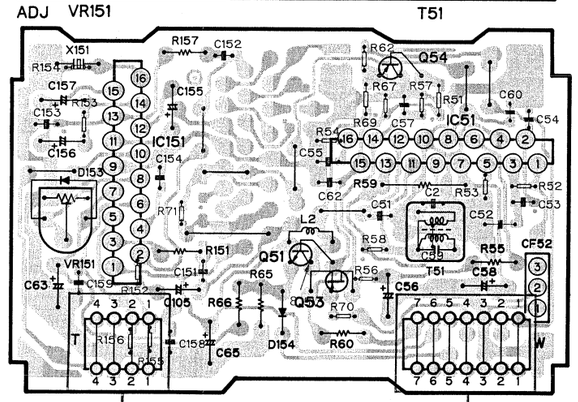
ADJ — T204 T203 T205 — T206



FM P.C.BOARD

IC. Q — IC151 — Q51 Q53 Q54 — IC51

ADJ — VR151 — T51



KEY BOARD UNIT

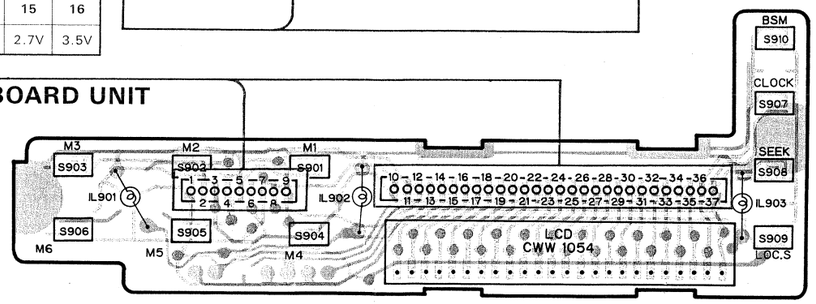


Fig. 11

14. EXPLODED VIEW

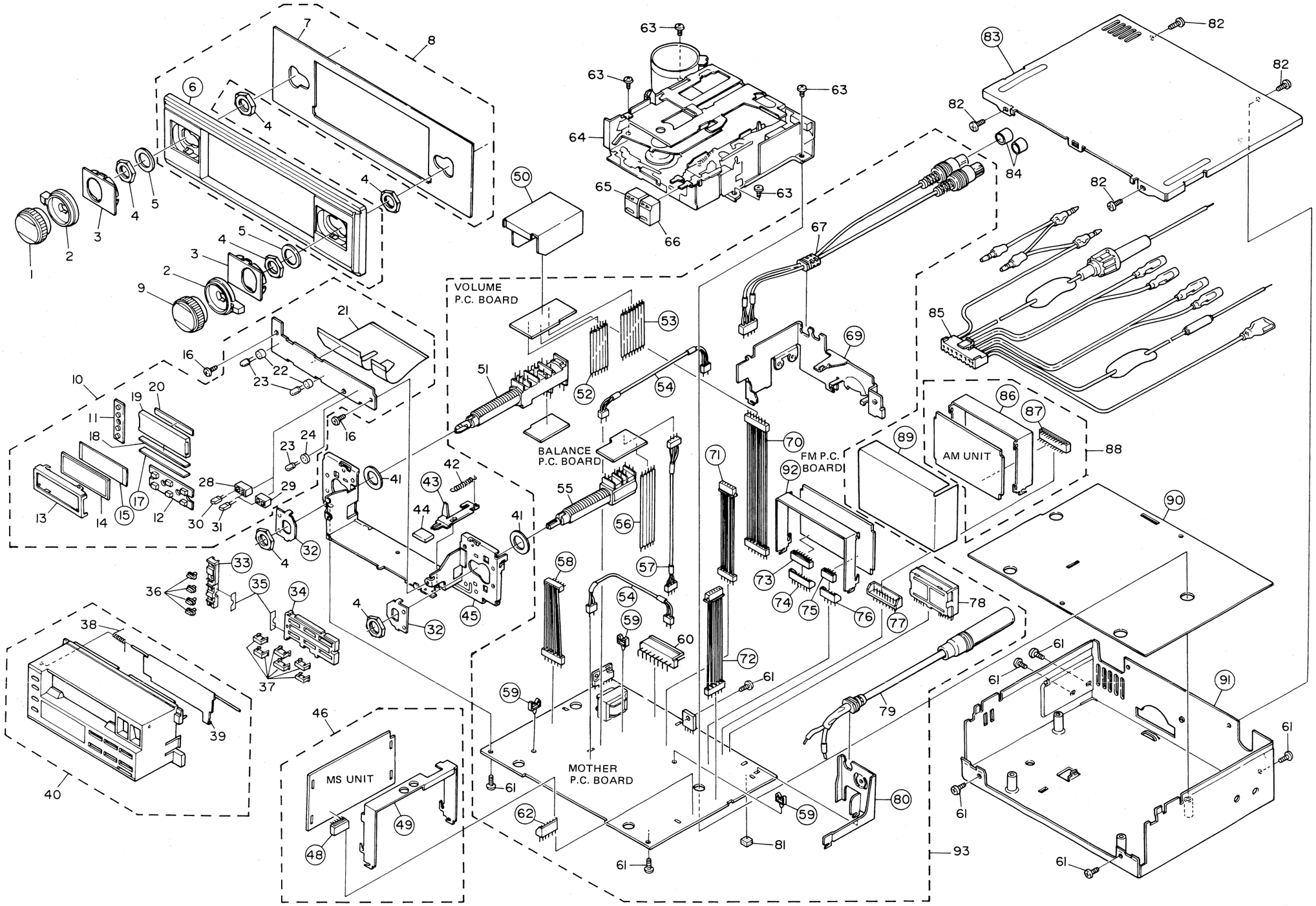


Fig. 12

- **Parts List**

NOTE:

- *For your Parts*
  ★ ★ and ★.
  ★ ★: GENER
  This classificat
  number, temp
- *Parts whose p*
- *Parts marked*
  longer than us

Mark	No.	
★	1	0
★		0
★	2	0
	3	0
	4	0
	5	0
	6	
	7	0
	8	0
★	9	0
★		0
◉	10	0
◉		0
◉		0
	11	0
	12	0
	13	0
	14	0
	15	
	16	F
	17	
	18	0
	19	0
	20	0
	21	0
	22	0
★★	23	0
	24	0
	25	.

L

• Parts List

NOTE:

- *For your Parts Stock Control, the fast moving items are indicated with the marks ★★ and ★.*
  ★★: GENERALLY MOVES FASTER THAN ★.
  This classification shall be adjusted by each distributor because it depends on model number, temperature, humidity, etc.
- *Parts whose parts numbers are omitted are subject to being not supplied.*
- *Parts marked by "◉" are not always kept in stock. Their delivery time may be longer than usual or they may be unavailable.*

Mark	No.	Part No.	Description
★	1	CAA1011	Knob (KE-4343, KE-3525, KE-3333)
★		CAA1109	Knob (KE-2323)
★	2	CAA1054	Knob
	3	CNK-292	Cap
	4	CBN-028	Nut
	5	CND-646	Spacer
	6		Panel (KE-4343, KE-3525, KE-3333)
			Panel (KE-2323)
	7	CNG-633	Plate
	8	CXA1968	Panel Assy (KE-4343, KE-3525, KE-3333)
		CXA1975	Panel Assy (KE-2323)
★	9	CAA1113	Knob (KE-4343, KE-3333, KE-2323)
★		CAA1122	Knob (KE-3525)
◉	10	CWS1090	Key Board Unit (KE-4343)
◉		CWS1092	Key Board Unit (KE-3525)
◉		CWS1093	Key Board Unit (KE-3333, KE-2323)
	11	CNV1375	Rubber
	12	CNV1760	Rubber
	13	CNH-136	Holder
	14	CWW1054	LCD
	15		Plate
	16	PMZ20P050FMC	Screw
	17		Insulator
	18	CNY-214	Connector
	19	CNY-215	Lens
	20	CNN-137	Spacer
	21	CNP1670	P.C.Board
	22	CNV1088	Bush
★★	23	CEL1025	Lamp
	24	CNV1102	Bush
	25	·····	
	26	·····	
	27	·····	
	28	CNV1302	Bush (KE-4343)
	29	CNV1302	Bush (KE-3525)
★	30	SLR-320VR3FKL	LED (KE-4343)
★	31	SLR-320PG3KL	LED (KE-3525)
	32		Holder
	33		Lens
	34		Lens
	35		Plate
★	36	CAC1712	Button
★	37	CAC1540	Button
	38	CBH1033	Spring
	39	CAT1117	Door (KE-4343)
		CAT1120	Door (KE-3525)
		CAT1119	Door (KE-3333, 2323)
	40	CXA2003	Grille Unit (KE-4343)
		CXA2006	Grille Unit (KE-3525)
		CXA2005	Grille Unit (KE-3333)
		CXA2007	Grille Unit (KE-2323)
	41	CBE-084	Spacer
	42	CBH1084	Spring
	43		Lever
★	44	CAC1550	Button
	45		Frame Unit
◉	46	CWM1455	MS Unit (KE-4343)
	47	·····	
	48		Connector (KE-4343)
	49		Holder (KE-4343)
	50		Insulator
★★	51	CCS1038	Volume (KE-4343, KE-3525, KE-3333)
★★		CCS1039	Volume (KE-2323)
	52		Connector
	53		Connector (8P) (KE-4343, KE-3525, KE-3333)
			Connector (2P) (KE-2323)
	54		Connector
★★	55	CSD1005	Switch
	56		Connector
	57		Connector
	58		Connector (KE-4343, KE-3525, KE-3333)
	59		Clamper
	60	CKS-465	Plug
	61	BMZ30P060FMC	Screw
	62		Plug (KE-4343)
	63	BMZ26P050FMC	Screw
◉	64	EXK1010	Cassette Mechanism Assy (KE-4343)
◉		EXK1130	Cassette Mechanism Assy (KE-3525, KE-3333, KE-2323)
★★	65	CAC1358	Button (◁◁) ◉
★★	66	CAC1357	Button (▷▷)
	67	CDE1674	Connector (KE-4343, KE-3525, KE-3333)
	68	·····	
	69		Heat Sink
	70		Connector (7P) (KE-4343, KE-3525, KE-3333)
			Connector (4P) (KE-2323)
	71		Connector (6P) (KE-4343)
			Connector (5P) (KE-3525, KE-3333, KE-2323)
	72		Connector
	73		Connector
	74		Plug
	75		Connector
	76		Plug
	77		Plug
	78	CWB1021	Front End
	79	CDH1069	Antenna Cable
	80		Holder
	81	CNN-412	Cushion
	82	BMZ30P040FMC	Screw
	83		Case
	84	CNW-829	Cap (KE-4343, KE-3525, KE-3333)
	85	CDE1769	Cord Assy (KE-4343, KE-3525, KE-3333)
		CDE1770	Cord Assy (KE-2323)
	86		Holder
	87		Plug
	88	CWA1009	AM Unit
	89		Insulator
	90		Insulator
	91		Chassis Unit (KE-4343, KE-3525, KE-3333)
			Chassis Unit (KE-2323)
	92		Holder
◉	93	CWM1439	P.C.Board Unit (KE-4343)
◉		CWM1447	P.C.Board Unit (KE-3525)
◉		CWM1445	P.C.Board Unit (KE-3333)
◉		CWM1451	P.C.Board Unit (KE-2323)

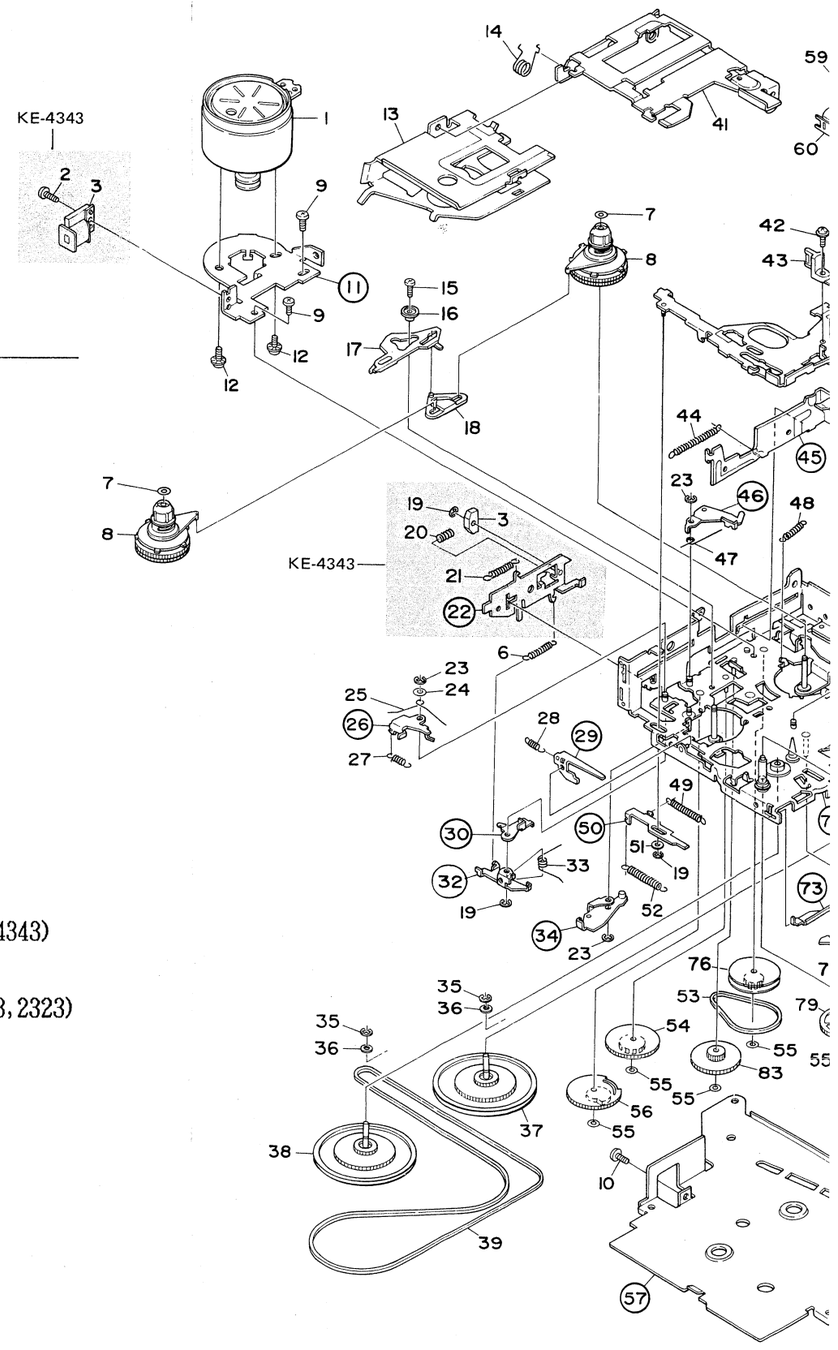
15. CASSETTE MECHANISM ASSY EXPLODED VIEW

● Parts List

Mark	No.	Part No.	Description
★★	1	EXA1013	Motor Unit
	2	EBA1008	Screw(KE-4343)
★	3	EXP1001	Solenoid(KE-4343)
	4,5	·····	
	6	EBH1056	Spring(KE-4343)
		EBH1011	Spring(KE-3525,3333, 2323)
	7	CBF-166	Washer
★★	8	EXA1012	Reel Unit
	9	BMZ23P030FMC	Screw
	10	BSZ23P040FMC	Screw
	11		Bracket
	12	PMS26P025FUC	Screw
	13	ENC1013	Cassette Holder
	14	EBH1019	Spring
	15	EBA1009	Screw
	16	ELA1042	Collar
	17	ENV1032	Arm
	18	ENV1031	Arm
	19	YE12FUC	Washer
	20	EBH1038	Spring(KE-4343)
	21	EBH1012	Spring(KE-4343)
	22		Lever Unit(KE-4343)
	23	YE15FUC	Washer
	24	CBF-165	Washer
	25	EBH1049	Spring
	26		Arm
	27	EBH1037	Spring
	28	EBH1039	Spring
	29		Arm
	30		Arm
	31	·····	
	32		Arm(KE-4343)
			Arm(KE-3525,3333, 2323)
	33	EBH1008	Spring(KE-4343)
		EBH1050	Spring(KE-3525,3333, 2323)
	34		Arm Unit
	35	CBG1001	Washer
	36	HBF-179	Washer
	37	ENV1029	Flywheel(N)
	38	ENV1030	Flywheel(R)
★★	39	ENT1003	Belt
	40	·····	
	41	EXA1014	Cassette Frame Unit
	42	PMS20P040FMC	Screw
	43	ENV1016	Tape Guide
	44	EBH1047	Spring
	45		Lever
	46		Arm
	47	EBH1040	Spring
	48	EBH1041	Spring
	49	EBH1021	Spring
	50		Lever
	51	EBE1001	Washer
	52	EBH1009	Spring
★★	53	ENT1004	Belt
	54	ENV1034	Gear
	55	CBF-135	Washer
	56	ENV1014	Gear
	57		Cover
	58	EBA1011	Screw
	59	BMZ20P050FMC	Screw
★★	60	EPB1001	Head
	61	CBH-198	Spring
	62	ENP1003	P.C.Board
	63		Arm
	64	EXA1004	Head Base Unit
	65	EBH1004	Spring
	66	EBH1003	Spring
	67	CNY-265	Cushion
	68	YE20FUC	Washer
★★	69	EXA1002	Roller Unit
	70		Chassis Unit
	71	EBF1004	Washer
	72	ENV1009	Pulley
	73		Lever
	74	EBH1025	Spring
	75	EBL1001	Spring
	76	ENV1010	Pulley
	77		Arm
	78	HBA-147	Screw
	79	ENV1035	Gear
	80	ELA1018	Collar
	81		Arm
	82		Plug
	83	ENV1011	Gear
	84		Arm
	85	EBH1024	Spring
	86		Ratchet
	87	EBH1018	Spring
★★	88	EXA1003	Roller Unit
	89		Arm
	90		Lever
	91	EBH1013	Spring
	92	*	
	93	ENV1038	Gear
	94	ELA1032	Collar
	95	HBA-212	Screw
	96	EBH1007	Spring
	97	EBH1006	Spring
	98	EBH1014	Spring
	99	EBF1005	Washer
	100		Arm Unit
	101	ENV1018	Gear
	102	ENV1017	Gear
	103	EBH1022	Spring
	104	EXA1005	Arm Unit
	105		Plug(6P)(KE-4343)
			Plug(5P) (KE-3525,3333,2323)
	106	EBA1010	Screw
	107	BMZ20P070FMC	Screw
	108		Bracket
	109	EBH1016	Spring
	110		Lever Unit
	111	EBH1048	Spring
	112	EBH1005	Spring
	113		Lever
	114		Lever
	115		Arm
	116	WH23FMC	Washer

*)Number 92 is part of the chassis unit and cannot be removed.

● Cassette Mechanism Assy



● Cassette Mechanism Assy

Mark	No.	Part No.	Description
	86		Ratchet
	87	EBH1018	Spring
★★	88	EXA1003	Roller Unit
	89		Arm
	90		Lever
	91	EBH1013	Spring
	92	*	
	93	ENV1038	Gear
	94	ELA1032	Collar
	95	HBA-212	Screw
	96	EBH1007	Spring
	97	EBH1006	Spring
	98	EBH1014	Spring
	99	EBF1005	Washer
	100		Arm Unit
	101	ENV1018	Gear
	102	ENV1017	Gear
	103	EBH1022	Spring
	104	EXA1005	Arm Unit
	105		Plug(6P)(KE-4343)
			Plug(5P) (KE-3525,3333,2323)
	106	EBA1010	Screw
	107	BMZ20P070FMC	Screw
	108		Bracket
	109	EBH1016	Spring
	110		Lever Unit
	111	EBH1048	Spring
	112	EBH1005	Spring
	113		Lever
	114		Lever
	115		Arm
	116	WH23FMC	Washer

*)Number 92 is part of the chassis unit and cannot be removed.

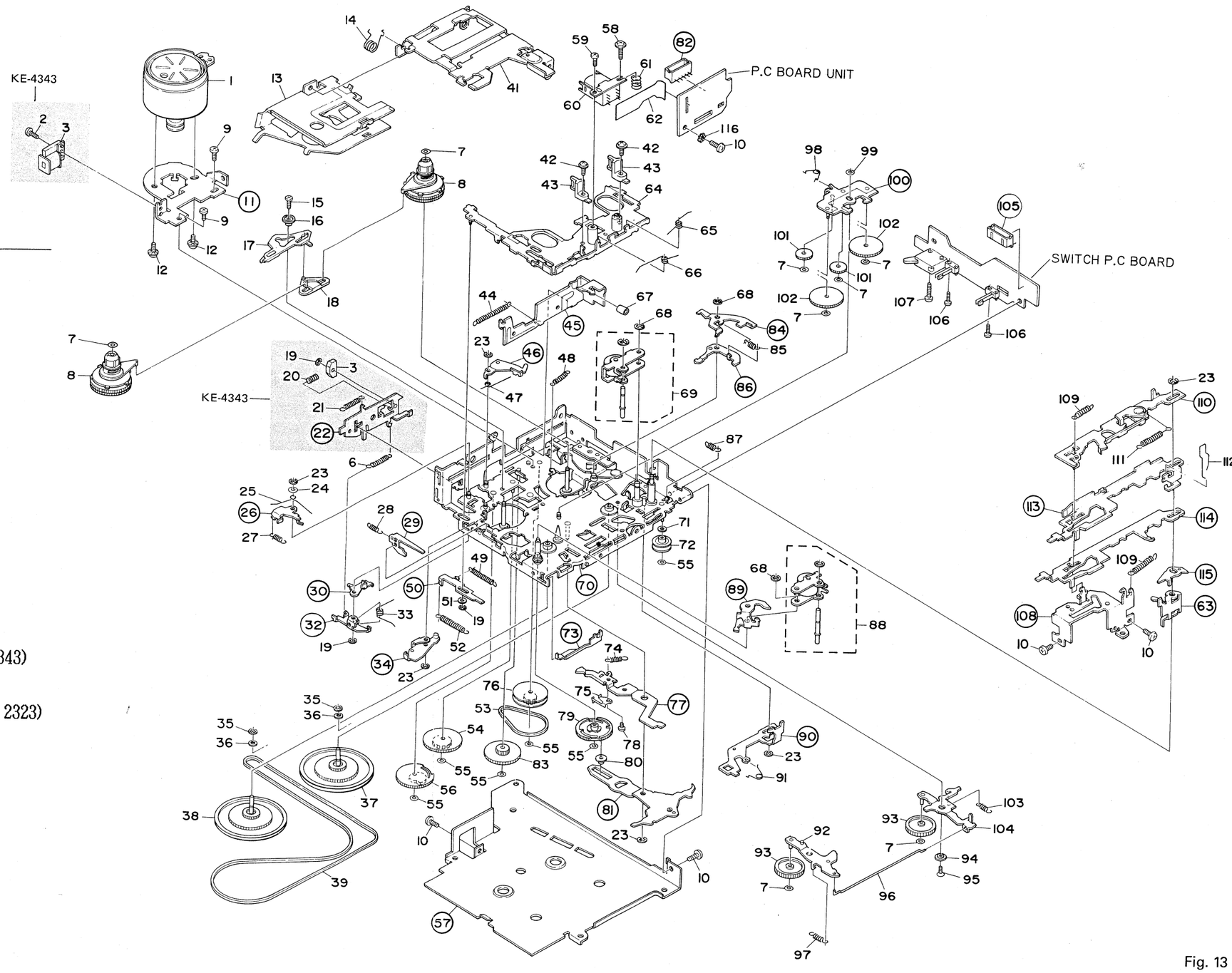


Fig. 13

16. ELECTRICAL PARTS LIST

NOTE:

- *For your parts Stock Control, the fast moving items are indicated with the marks ‡‡ and ‡.*
  ‡‡ : GENERALLY MOVES FASTER THAN ‡.
  This classification shall be adjusted by each distributor because it depends on model number, temperature, humidity, etc.'
- *Parts whose parts numbers are omitted are subject to being not supplied.*
- *The part numbers shown below indicate chip components.*
  Chip Resistor
  RS1/8S□□□J, RS1/10S□□□J
  Chip Capacitor (except for CQS.....)
  CKS....., CCS....., CSZS.....

Unit Number :
Unit Name : AM Unit

MISCELLANEOUS

Mark	Circuit Symbol & No.	Part Name	Part No.
‡‡	IC 201		PA4010
‡‡	Q 201		2SK435
‡‡	Q 202		2SC2458
			(2SC1740S)
‡‡	Q 203 204 205		DTC124ES
‡	D 201 202 204 205		1SS176
			(1SS133)
			(US1040M)
‡	D 203	Variable Capacitance Diode	SVC203-AB
	L 201	Ferri-Inductor	CTF1026
	L 202	Ferri-Inductor	LAU220K
	L 203	Ferri-Inductor	LAU470K
	L 204	Ferri-Inductor	CTF-157
	L 205	Ferri-Inductor	LAU4R7K
	T 201	Coil	CTB1020
	T 202	Coil	CTB1004
	T 203	Coil	CTB1017
	T 204	Coil	CTE1013
	T 205	Coil	CTE1014
	T 206	Coil	CTE1015
	CF 201	Filter	CTF1027
	CF 202	Filter	CTF-100
	X 201	Xtal Resonator	CSS1014
‡‡	VR 201	Semi-fixed 4.7kΩ(B)	VRTB6VS472

RESISTORS

Mark	Circuit Symbol & No.	Part Name	Part No.
	R 201		RD1/4PS220JL
	R 202		RD1/4PS681JL
	R 203		RD1/4PS222JL
	R 204		RS1/10S473J
	R 205		RS1/10S470J
	R 206		RS1/10S222J
	R 207		RS1/10S822J
	R 208 212 213 214		RS1/10S103J
	R 209		RS1/8S470J
	R 210		RS1/10S682J
	R 211		RS1/10S104J
	R 220		RS1/8S0R0J

CAPACITORS

Mark	Circuit Symbol & No.	Part Name	Part No.
	C 201 209 223 231		CKSQYB103K50
	C 202 212 214		CKSQYB332K50
	C 203 215 216 219		CKSQYF473Z50
	C 204 208 210		CKSQYB223K50
	C 205 213		CCSQCH220J50
	C 206 207		CCSQCH820J50
	C 211		CEA010M50LS2
	C 218		CEA2R2M35NPLL
	C 220		CCSQCH430J50
	C 221		CCSQCH100D50
	C 222		CSZA010K25
	C 224 229		CEA470M16LS
	C 225		CKSQYF333Z50
	C 226		CKSYF683Z50
	C 227		CEA4R7M35LS
	C 228		CKSYB103K50
	C 230		CEA220M16LS
	C 232		CCSQCH220J50

P:C.Board Unit
Consists of
●Mother P.C.Board
●FM P.C.Board
●Volume P.C.Board
●Balance P.C.Board

Unit Number :
Unit Name : P.C.Board Unit

MISCELLANEOUS

Mark	Circuit Symbol & No.	Part Name	Part No.
‡‡	IC 51		LA1140B
‡‡	IC 151		LA3430P
‡‡	IC 251		M51522AL
‡‡	IC 404		AN6540
‡‡	IC 451(KE-4343, KE-3525, KE-3333)		TA75558P

Mark	Circuit Symbol & No.	Part Name	Part No.
‡‡	IC 501		PD4132
‡‡	IC 551		TA7280P
‡‡	Q 51 504 505 512 601 602 655 656 659		2SC2458
			(2SC536SP)
			(2SC1740S)
‡‡	Q 53		2SJ105
‡‡	Q 54 658		2SA1048
			(2SA933S)
			(2SA608SP)
‡‡	Q 55 503 506 514		DTC124ES
‡‡	Q 231 513		2SC3113
			(2SC3623A)
‡‡	Q 253(KE-3525) 254(KE-3525)		2SC2458
			(2SC536SP)
			(2SC1740S)
‡‡	Q 501 502		2SA1150
‡‡	Q 507(KE-4343)		DTC143TS
‡‡	Q 508(KE-3525)		DTC143TS
‡‡	Q 510(KE-4343)		DTA114YS
‡‡	Q 511		DTC143TS
‡‡	Q 515		DTA114YS
‡‡	Q 534		2SC2498
			(2SC2026)
‡‡	Q 603		2SD1859
			(2SD667)
‡‡	Q 651 652		2SD1468S
‡‡	Q 662(KE-4343, KE-3525, KE-3333)		2SA1048
			(2SA933S)
			(2SA608SP)
‡‡	Q 663(KE-4343, KE-3525, KE-3333)		2SD1468S
‡‡	Q 664(KE-4343, KE-3525, KE-3333)		2SD1468S
‡	D 151 152 153 154 201 202 251 252 253 452		1SS270
			(US1040M)
			(1SS133)
‡	D 501		RD4R7ESB1
			(MTZ4R7JA)
‡	D 502 506 507 508 509 510 512 513 514		1SS270
			(US1040M)
			(1SS133)
‡	D 503		US1040
			(1S1555)
‡	D 504		HZS5R6JB2
			(RD5R6JSB2)
‡	D 505(KE-4343)		1SS270
			(US1040M)
			(1SS133)
‡	D 516		RD6R8ESB2
			(MTZ6R8JB)
‡	D 517(KE-3525)		1SS270
			(US1040M)
			(1SS133)
‡	D 601		MTZ9R1JA
			(RD9R1ESB1)
‡	D 607		ERA15-02VH
‡	D 651 653 654 655 656		1SS270
			(US1040M)
			(1SS133)

Mark	Circuit Symbol & No.	Part Name	Part No.
‡	D 657		MTZ9R1JC
			(RD9R1ESB3)
	L 1 2	Inductor	LAU150K
	L 601	Choke Coil	CTF-002
	T 51	Coil	CTC1029
	CT 501	Trimmer	CCG-070
	CG 1	Capacitor with Discharge Gap	CCX-006
	CF 51 52	Ceramic Filter	CTF-182
	X 151	Ceramic Resonator	CSS1028
			(CSS1022)
	X 501	Xtal Resonator	CSS1011
‡‡	S 601/VR 601	Switch/Volume 50kΩ(G)	CSD1005
‡‡	VR 151	Semi-fixed 15kΩ(B)	VRTB6VS153
‡‡	VR 451/S 451(KE-4343, KE-3525, KE-3333) Volume/Switch 200Ω, 20kΩ(B), 50kΩ(B)×2		CCS1038
‡‡	VR 451/S 451(KE-2323) Volume/Switch 20kΩ(A), 20kΩ(B)		CCS1039
		Front End	CWB1021

RESISTORS

Mark	Circuit Symbol & No.	Part Name	Part No.
	R 51		RS1/8S0R0J
	R 52		RS1/10S331J
	R 53 57		RS1/10S473J
	R 54		RS1/10S104J
	R 55		RD1/4PS153JL
	R 56		RS1/10S123J
	R 58		RS1/10S682J
	R 59		RD1/4PM562J
	R 60		RD1/4PS104JL
	R 61		RS1/10S473J
	R 62		RS1/10S223J
	R 64 67		RS1/10S153J
	R 65 66		RD1/4PS472JL
	R 68		RS1/10S103J
	R 69		RS1/8S682J
	R 70		RS1/10S474J
	R 71		RS1/8S0R0J
	R 151 232 551 552 663		RD1/4PS222JL
	R 152		RS1/10S183J
	R 153		RS1/10S102J
	R 154		RS1/10S334J
	R 155 156		RS1/10S222J
	R 157		RD1/4PS473JL
	R 231(KE-4343, KE-3525, KE-3333)		RS1/10S223J
	R 231(KE-2323)		RS1/10S103J
	R 233		RS1/10S221J
	R 234		RS1/10S103J
	R 235 523 656		RD1/4PS223JL
	R 236(KE-4343, KE-3525, KE-3333)		RS1/10S223J
	R 255 256		RD1/4PS161JL
	R 257 258		RD1/4PS133JL
	R 259		RS1/10S334J
	R 260		RD1/4PS334JL
	R 261		RD1/4PS272JL
	R 262		RS1/8S272J

Mark	Circuit Symbol & No.	Part Name	Part No.
**	IC 501		PD4132
**	IC 551		TA7280P
**	Q 51 504 505 512 601 602 655 656 659		2SC2458
			(2SC536SP)
			(2SC1740S)
**	Q 53		2SJ105
**	Q 54 658		2SA1048
			(2SA933S)
			(2SA608SP)
**	Q 55 503 506 514		DTC124ES
**	Q 231 513		2SC3113
			(2SC3623A)
**	Q 253(KE-3525) 254(KE-3525)		2SC2458
			(2SC536SP)
			(2SC1740S)
**	Q 501 502		2SA1150
**	Q 507(KE-4343)		DTC143TS
**	Q 508(KE-3525)		DTC143TS
**	Q 510(KE-4343)		DTA114YS
**	Q 511		DTC143TS
**	Q 515		DTA114YS
**	Q 534		2SC2498
			(2SC2026)
**	Q 603		2SD1859
			(2SD667)
**	Q 651 652		2SD1468S
**	Q 662(KE-4343, KE-3525, KE-3333)		2SA1048
			(2SA933S)
			(2SA608SP)
**	Q 663(KE-4343, KE-3525, KE-3333)		2SD1468S
**	Q 664(KE-4343, KE-3525, KE-3333)		2SD1468S
*	D 151 152 153 154 201 202 251 252 253 452		1SS270
			(US1040M)
			(1SS133)
*	D 501		RD4R7ESB1
			(MTZ4R7JA)
*	D 502 506 507 508 509 510 512 513 514		1SS270
			(US1040M)
			(1SS133)
*	D 503		US1040
			(1S1555)
*	D 504		HZS5R6JB2
			(RD5R6JSB2)
*	D 505(KE-4343)		1SS270
			(US1040M)
			(1SS133)
*	D 516		RD6R8ESB2
			(MTZ6R8JB)
*	D 517(KE-3525)		1SS270
			(US1040M)
			(1SS133)
*	D 601		MTZ9R1JA
			(RD9R1ESB1)
*	D 607		ERA15-02VH
*	D 651 653 654 655 656		1SS270
			(US1040M)
			(1SS133)

Mark	Circuit Symbol & No.	Part Name	Part No.
*	D 657		MTZ9R1JC
			(RD9R1ESB3)
	L 1 2	Inductor	LAU150K
	L 601	Choke Coil	CTF-002
	T 51	Coil	CTC1029
	CT 501	Trimmer	CCG-070
	CG 1	Capacitor with Discharge Gap	CCX-006
	CF 51 52	Ceramic Filter	CTF-182
	X 151	Ceramic Resonator	CSS1028
			(CSS1022)
	X 501	Xtal Resonator	CSS1011
**	S 601/VR 601 Switch/Volume 50kΩ(G)		CSD1005
**	VR 151	Semi-fixed 15kΩ(B)	VRTB6VS153
**	VR 451/S 451(KE-4343, KE-3525, KE-3333) Volume/Switch 200Ω, 20kΩ(B), 50kΩ(B)×2		CCS1038
**	VR 451/S 451(KE-2323) Volume/Switch 20kΩ(A), 20kΩ(B)		CCS1039
		Front End	CWB1021

RESISTORS

Mark	Circuit Symbol & No.	Part Name	Part No.
	R 51		RS1/8S0R0J
	R 52		RS1/10S331J
	R 53 57		RS1/10S473J
	R 54		RS1/10S104J
	R 55		RD1/4PS153JL
	R 56		RS1/10S123J
	R 58		RS1/10S682J
	R 59		RD1/4PM562J
	R 60		RD1/4PS104JL
	R 61		RS1/10S473J
	R 62		RS1/10S223J
	R 64 67		RS1/10S153J
	R 65 66		RD1/4PS472JL
	R 68		RS1/10S103J
	R 69		RS1/8S682J
	R 70		RS1/10S474J
	R 71		RS1/8S0R0J
	R 151 232 551 552 663		RD1/4PS222JL
	R 152		RS1/10S183J
	R 153		RS1/10S102J
	R 154		RS1/10S334J
	R 155 156		RS1/10S222J
	R 157		RD1/4PS473JL
	R 231(KE-4343, KE-3525, KE-3333)		RS1/10S223J
	R 231(KE-2323)		RS1/10S103J
	R 233		RS1/10S221J
	R 234		RS1/10S103J
	R 235 523 656		RD1/4PS223JL
	R 236(KE-4343, KE-3525, KE-3333)		RS1/10S223J
	R 255 256		RD1/4PS161JL
	R 257 258		RD1/4PS133JL
	R 259		RS1/10S334J
	R 260		RD1/4PS334JL
	R 261		RD1/4PS272JL
	R 262		RS1/8S272J

Mark	Circuit Symbol & No.	Part Name	Part No.
	R 268(KE-3525)		RD1/4PS223JL
	R 269(KE-3525) 270(KE-3525)		RD1/4PS182JL
	R 271(KE-3525) 272(KE-3525)		RD1/4PS104JL
	R 273(KE-3525, KE-3333, KE-2323)		RD1/4PS222JL
	R 274(KE-3525, KE-3333, KE-2323)		RD1/4PS222JL
	R 451(KE-4343, 3525, 3333)		RD1/4PS222JL
	R 452(KE-4343, 3525, 3333)		RD1/4PS222JL
	R 453(KE-4343, 3525, 3333)		RD1/4PS332JL
	R 454(KE-4343, 3525, 3333)		RD1/4PS332JL
	R 455(KE-4343, 3525, 3333)		RD1/4PS153JL
	R 456(KE-4343, 3525, 3333)		RD1/4PS153JL
	R 457(KE-4343, 3525, 3333)		RD1/4PS153JL
	R 458(KE-4343, 3525, 3333)		RD1/4PS153JL
	R 459(KE-4343, 3525, 3333)		RS1/10S393J
	R 460(KE-4343, 3525, 3333)		RS1/10S473J
	R 461 462		RS1/8S102J
	R 463(KE-4343, 3525, 3333)		RD1/4PS182JL
	R 464(KE-4343, 3525, 3333)		RD1/4PS182JL
	R 463(KE-2323) 464(KE-2323)		RD1/4PS821JL
	R 501		RS1/10S332J
	R 502 511		RS1/10S223J
	R 503 610		RD1/4PS102JL
	R 504(KE-4343)		RD1/4PS821JL
	R 505(KE-3525)		RD1/4PS821JL
	R 506		RS1/8S223J
	R 507 512 530		RD1/4PS472JL
	R 513 612		RD1/4PS103JL
	R 514		RD1/4PS560JL
	R 515		RD1/4PM122J
	R 516		RS1/10S474J
	R 518 659		RS1/10S222J
	R 519		RS1/10S333J
	R 520		RS1/10S473J
	R 521		RD1/4PM223J
	R 522 524 525		RD1/4PM472J
	R 527 658		RD1/4PS391JL
	R 531		RD1/4PS182JL
	R 532		RD1/4PS821JL
	R 533 534 555 556		RD1/4PS101JL
	R 535		RD1/4PS104JL
	R 536		RS1/10S331J
	R 537		RD1/4PM472J
	R 557		RD1/4PS010JL
	R 558(KE-4343, KE-3525, KE-3333)		RD1/4PS181JL
	R 559(KE-4343, KE-3525, KE-3333)		RD1/4PS181JL
	R 560(KE-4343, KE-3525, KE-3333)		RD1/4PS390JL
	R 561(KE-4343, KE-3525, KE-3333)		RD1/4PS390JL
	R 562(KE-4343, KE-3525, KE-3333)		RS1P220JL
	R 563(KE-4343, KE-3525, KE-3333)		RS1P220JL
	R 564(KE-4343, KE-3525, KE-3333)		RD1/4PS104JL
	R 565(KE-4343, KE-3525, KE-3333)		RD1/4PS223JL
	R 601 602		RD1/4PS333JL
	R 605 606		RD1/4PS222JL
	R 611		RD1/4PS152JL
	R 613		RD1/4PS272JL
	R 651		RD1/4PM103J
	R 652 662		RD1/4PS473JL
	R 655		RD1/4PS822JL
	R 660		RS1/10S104J
	R 661		RD1/4PS223JL

CAPACITORS

Mark	Circuit Symbol & No.	Part Name	Part No.
	C 1		CKSQYF473Z50
	C 2		CCSQCH200J50
	C 51 53 54 153		CKSQYB223K50
	C 52		CKSYB223K50
	C 55 62		CCSQSL330J50
	C 56 63		CEAR47M50LS2
	C 57		CKSQYB103K50
	C 58		CEA010M50LS2
	C 59		CKSQYF473Z50
	C 60		CCSQSL101J50
	C 61 68		CKSQYB103K50
	C 64		CKSQYB561K50
	C 65		CEA470M16LS
	C 105		CEA220M16LS
	C 151		CKSQYF104Z25
	C 152		CKSQYB332K50
	C 154		CKSQYB153K50
	C 155 156		CEA3R3M50LS
	C 157		CSZAR22M35
	C 158 159		CKSYB393K25
	C 231 504 653		CKSQYB103K50
	C 251 252		CKCYB471K50
	C 253 254		CEANL4R7M35LL
	C 255 256		CEA470M16LS
	C 257 258		CQMA103K50
	C 261(KE-3525) 262(KE-3525)		CGCYX223K25
	C 263		CEA221M10L2
	C 451 452		CEA100M16LS
	C 453(KE-4343, KE-3525, KE-3333)		CGCYX182K25
	C 454(KE-4343, KE-3525, KE-3333)		CGCYX182K25
	C 455(KE-4343, KE-3525, KE-3333)		CGCYX182K25
	C 456(KE-4343, KE-3525, KE-3333)		CGCYX182K25
	C 457(KE-4343, KE-3525, KE-3333)		CGCYX333M25
	C 458(KE-4343, KE-3525, KE-3333)		CGCYX333M25
	C 459(KE-4343, KE-3525, KE-3333)		CCPSL330J50L
	C 460(KE-4343, KE-3525, KE-3333)		CCPSL330J50L
	C 461(KE-4343, KE-3525, KE-3333)		CEA010M50L2
	C 462(KE-4343, KE-3525, KE-3333)		CEA010M50L2
	C 463(KE-4343, KE-3525, KE-3333)		CEA010M50L2
	C 464(KE-4343, KE-3525, KE-3333)		CEA010M50LS2
	C 465 466		CEAR47M50L2
	C 467(KE-2323) 468(KE-2323)		CEAR33M50LS2
	C 501		CCSQCH090D50
	C 502 505 509 616		CKSQYF473Z50
	C 503		CEA331M6R3L2
	C 506 507		CKPYB101K50L
	C 508		CKSYB103K50
	C 551 552		CKCYB821K50
	C 553 554		CEA010M50L2
	C 555 556		CEA470M10L2
	C 557 558 608 609		CEA101M10L2
	C 559 560		CQMA224J50
	C 561 562		CEA102M10L2
	C 563		CEA470M16LS
	C 564		CEA222M16L2

Mark	Circuit Symbol & No.	Part Name	Part No.
	C 565		CQMA154J50
	C 612	4.7μF/16V	CCH1005
	C 614		CEA010M50LS2
	C 615		CEA221M10L2
	C 617		CEA101M50L2
	C 651		CEA100M16LS
	C 652		CEA330M16LS
	C 654		CEA470M16LS
	C 656		CEAR22M50LS2

Unit Number :
Unit Name : MS Unit(KE-4343)

MISCELLANEOUS

Mark	Circuit Symbol & No.	Part Name	Part No.
**	IC 401		PA0011
**	Q 401		2SC3311A
			(2SC2458)
**	Q 402		DTC124ES
*	D 401		RD9R1ESB3
			(MTZ9R1JC)

RESISTORS

Mark	Circuit Symbol & No.	Part Name	Part No.
	R 401 402 403		RD1/4PS103JL
	R 404		RD1/4PS224JL
	R 405		RD1/4PS104JL
	R 406		RD1/4PS273JL
	R 408		RD1/4PS472JL
	R 409		RD1/4PS271JL

CAPACITORS

Mark	Circuit Symbol & No.	Part Name	Part No.
	C 401 402		CGCYX103K25
	C 403		CGCYX392K25
	C 404 406		CEA010M50LL
	C 405		CEA1R5M50LL
	C 407		CEA220M10LL
	C 408		CEA4R7M35LL
	C 409		CEA100M16LL

Unit Number :
Unit Name : Key Board Unit

Mark	Circuit Symbol & No.	Part Name	Part No.
**	IL 901 902 903	Lamp 14V 40mA	CEL1025
*	D 517(KE-3525)	LED	SLR-320PG3KL
*	D 518(KE-4343)	LED	SLR-320VR3FKL
		LCD	CWW1054

Unit Number :
Unit Name : Switch P.C.Board

Mark	Circuit Symbol & No.	Part Name	Part No.
*	D 1(KE-4343)		F1SR35-100A
**	S 1 2	Switch(Mute, Motor)	ESN1001
**	S 3	Switch	HSK-126

Unit Number :
Unit Name : P.C.Board Unit

Mark	Circuit Symbol & No.	Part Name	Part No.
**	S 1	Switch(FWD/REV)	ESH1001

Miscellaneous Parts List

Mark	Circuit Symbol & No.	Part Name	Part No.
**	HD 1	Head	EPB1001
**	M 1	Motor Unit	EXA1013
*	SO 1(KE-4343)	Solenoid	EXP1001

17. PACKING METHOD

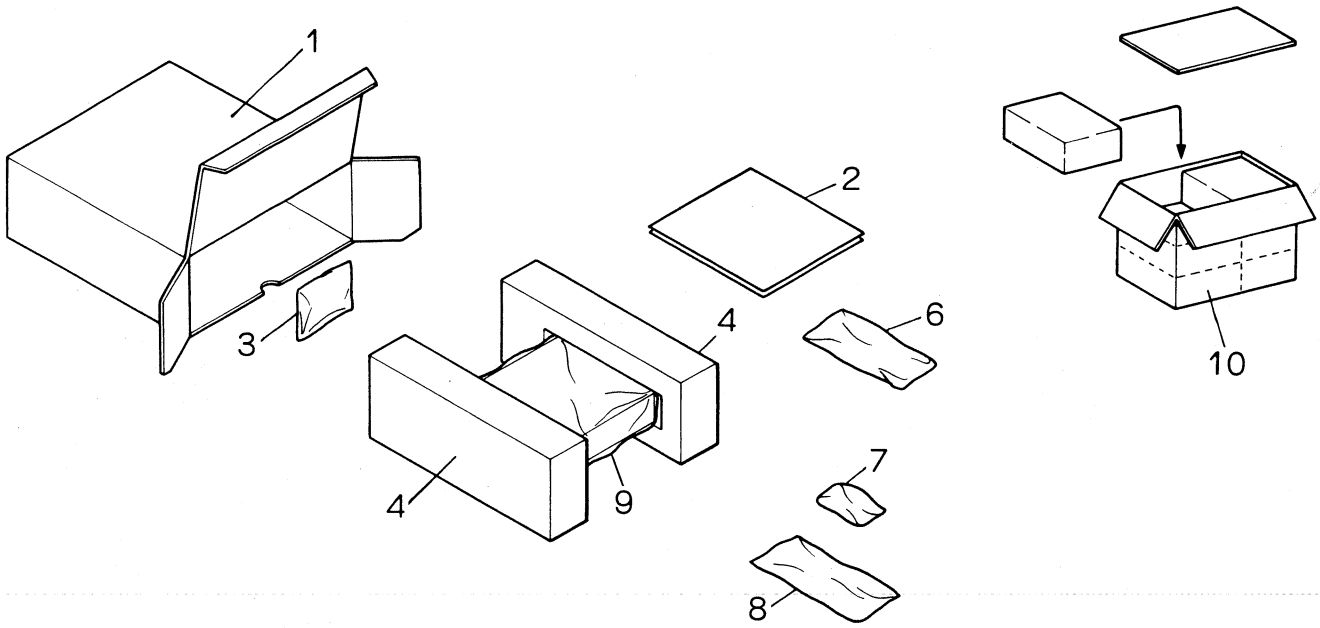


Fig. 14

● Parts List

Mark	No.	Part No.	Description
	1	CHG1409	Carton (KE-4343)
		CHG1428	Carton (KE-3525)
		CHG1412	Carton (KE-3333)
		CHG1413	Carton (KE-2323)
	2	CRD1174	Owner's Manual (KE-4343, 3333, 2323)
		CRB1107	Owner's Manual (KE-3525)
			Card
			Caution Card
	3	CXA1969	Knob Assy (KE-4343, 3333)
		CXA1979	Knob Assy (KE-3525)
		CXA1970	Knob Assy (KE-2323)
★	3-1	CAA1011	Knob (KE-4343, 3525, 3333)
★		CAA1109	Knob (KE-2323)
★	3-2	CAA1054	Knob
★	3-3	CAA1113	Knob (KE-4343, 3333, 2323)
★		CAA1122	Knob (KE-3525)
	3-4	CNK-292	Cap
	4	CHP1064	Styrofoam
	5	.....	
	6	CXA1968	Panel Assy (KE-4343, 3525, 3333)
		CXA1975	Panel Assy (KE-2323)
	6-1		Panel (KE-4343, 3525, 3333)
			Panel (KE-2323)

Mark	No.	Part No.	Description
	6-2	CNG-633	Plate
	7	CDE1769	Cord Assy (KE-4343, 3525, 3333)
		CDE1770	Cord Assy (KE-2323)
	8	CEA1313	Accessory Assy
	8-1	CDE1289	Cord
	8-2	CNF-111	Strap
	8-3	CNV-769	Washer
	8-4	CEA-215	Screw Kit
	8-4-1	WS40FMC	Washer
	8-4-2	NF40FMC	Nut
	8-4-3	NF50FMC	Nut
	8-4-4	CBA-028	Screw
	8-4-5	CBN-028	Nut
	8-4-6	CND-646	Spacer
	8-4-7	PMB50Y160FMC	Screw
	9	CEG-215	Polyethylene Bag
	10	CHL1409	Contain Box (KE-4343)
		CHL1428	Contain Box (KE-3525)
		CHL1412	Contain Box (KE-3333)
		CHL1413	Contain Box (KE-2323)